The Effects of Using Positive Reinforcement Techniques to Reduce Disruptive Behavior of Pupil with ADHD

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Abstract: This study is aimed to study the effects of using positive reinforcement techniques to reduce disruptive behavior of Attention Deficit Hyperactive Disorder (ADHD) Integrated Special Education Program (PPKI) in a school in Kuala Lumpur. Positive reinforcement is a rewarding technique for behavior that can be repeated or sustained. This study was conducted during the implementation of the English subject and involved a pupil with ADHD who was purposively selected for this study. The study follows the single-subject design (A-B-A) and was conducted for six consecutive weeks, comprising of the baseline phase (A), the intervention phase (B) and the non-intervention phase (A). The researcher used positive reinforcement techniques through the hand stamp method to the whole class where a stamp will be stamped at the back of the pupils' hands if they engage in the desired behavior. The data were recorded and analyzed using a frequency table and line graph.. The results showed that there was a reduction in disruptive behavior and increased pupil concentration after the intervention. This study is expected to assist and guide Special Education teachers in addressing pupil behavior problems.

Keywords: positive reinforcement; behavior management; ADHD

INTRODUCTION

Behavior is not a fixed individual characteristic, but rather, it revolves around an individual's action or he/she does or says. According to Zalina, Yasin & Tahar (2016), behavior reflects a pupils' action or trait as they explore the new environment around them. Human behavior has measurable dimensions which include frequency, duration, intensity and speed (Miltenberger, 2014). Meanwhile, Zlomke & Zlomke (2003) argued that children diagnosed with developmental, intellectual and mental problems often exhibit negative behaviors which could cause learning difficulties in school.

ADHD is a neuron-developmental disorder experience since childhood and has long-term clinical and social implications for the individual (Eliza Gordon-Lipkin, 2018). As such, ADHD pupils are often deemed as disruptive during the teaching and facilitating (PDPC) sessions in classrooms because their behaviors often disturb their peers physically, emotionally and socially (Hidayah Ishak, Mohd Hanafi Mohd Yasin & Mohd Mokhtar Tahar, 2016) and teachers are forced to interrupt the learning process in the classroom to control the behavior of pupils with ADHD.

Behavior modification is a term used to empirically describe the techniques of behavior modification to increase or decrease the frequency of a behavior. According to Miltenberger (2014), behavior modification applies scientific knowledge and professional training to analyze and modify human behavior. The analysis aims to identify the relationship between an environmental situation and a behavior to understand what cause the particular behavior. In the meantime, modification means developing and implementing procedures to help individuals change their behavior. As behaviorist B.F. Skinner brought up the Reinforcement Theory. The Reinforcement Theory is one of the oldest theories of motivation which describe behavior and how we act. This theory can called as „behaviorism" or „operant conditioning" that is taught in the today"s world of

psychology. This theory is all about: "an individual''s behavior is a function of its consequences" (Management Study Guide 2013).

According to the principles of behaviorism, behavior modification should consider the antecedents or underlying factors that influenced such behavior situations, as well as the consequences of such actions, or in other words, what happened after one exhibits a particular behavior exhibited. Both antecedents and consequences can influence the repetition and sustainment of certain behaviors. Martin, G., & Pear, J (2007) further stated that behavior management involves a systematic implementation of principles and techniques of learning to evaluate and modify apparent or hidden behaviors to enhance an individual's daily life skills. The ability to differentiate appropriate or inappropriate behavior is considered as a compulsory life skill for all individuals.

Therefore, behavior modification is an important skill that should be mastered by all Special Education teachers in schools. There are a variety of intervention techniques that can be used to modify pupil behavior in the classroom. Kappel et al., (2012) described that behavior modification is a method of changing or shaping one's behavior through positive or negative reinforcement techniques while according to Adibsereshki et al,. (2015), the desired behavior change process can be more effectively maintained through the use of positive reinforcement techniques compared to the use of punishment.

The main objective of this study is to examine the effectiveness of positive reinforcement techniques in reducing disruptive behaviors among ADHD pupils' and increasing their concentration during English lessons.

METHODOLOGY

This study used the *single-subject design* (A-B-A); (A) refers to the behavior observation phase *baseline* 1, (B) refers to the intervention implementation phase through the use of positive reinforcement (*hand stamp technique*) while the subsequent (A) refers to *baseline* 2 which denotes the non-intervention stage.
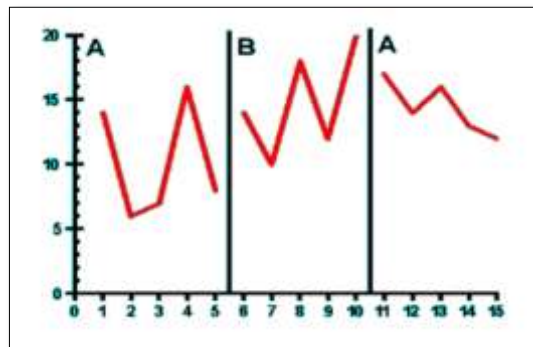
Figure 1: ABA Model *single-subject design*

The study sample was chosen purposively based on the researcher's observation during PDPC sessions in a school in Kuala Lumpur. The purposive sampling technique, also called judgment sampling, is the deliberate choice of a participant due to the qualities the participant possesses. It is a non-random technique that does not need underlying theories or a set number of participants. Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Bernard, 2002). The sample is a 9 year-old pupil with ADHD and was studying in year 3 Tulip at the time of the study. Based on the observation, the sample showed disruptive behavior during English lessons. The sample often disturb his peers, have difficulties following orders and often repeat disruptive behaviors, even when reprimanded by the teacher. On the other hand, the sample showed high understanding of the instructions given and was able to follow the syllabus taught.

The sample was able to achieve the learning outcomes and as he shows great understanding on the learning topics being taught by the teacher. However, he often exhibits disruptive behavior in class and this caused the teacher to interrupt the lesson to give him attention and control his behavior. The researcher, who is also the English subject teacher, conducted the observations for six weeks during English lessons. English lessons were conducted twice a week on Tuesdays and Thursdays for 1 hour, from 0830 am to 0930 am. The

sample's behaviors were recorded for six consecutive weeks using a behavioral frequency table adapted from Miltenberger's (2001).

The data obtained were analyzed using descriptive statistics and explained using the frequency data and line graph to indicate the effectiveness of the intervention conducted.

Baseline 1

Phase 1 or *baseline 1* involves the process of observing the sample's behavior before the intervention. Phase 1 observations were conducted for 2 weeks during English lessons which were conducted for one hour on Tuesdays and Thursdays from 0830 am to 0930 am. During each lessons, the sample exhibited disruptive behaviors that disturb his peers including taking his peers possessions without permission, mocking his peers talking loudly and being inattentive. The frequency of each disruptive behavior were recorded using the frequency table as shown in Table 1.

Intervention

The intervention phase was performed two weeks after the baseline phase. The intervention was conducted simultaneously for two consecutive weeks. The positive reinforcement technique known as the hand stamp method was used in this phase.

The hand stamp method was introduced to all pupils in the class. This method is implemented by stamping positive words on the back of the pupils' hand. The intervention started before the lesson began and the teacher explained the hand stamp reward will be given to them if they show positive behavior during English lessons. Therefore, throughout the course of the lesson, the teacher constantly reminded the pupils of the rewards they could get if they behave diligently.

The intervention was repeated for two consecutive weeks during English lessons.

Withdrawal /Post-intervention phase

This phase involves withdrawal of intervention for two consecutive weeks. This means that the pupils were not given any positive reinforcement during the lessons to see whether they will exhibit positive behavior without any rewards
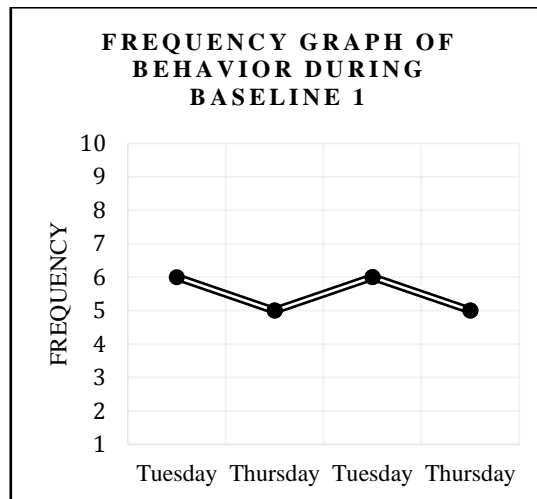
FINDINGS

Baseline Phase

Observations of the sample's behavior are aimed to collect information about his behavior prior to any intervention. The data collected in this phase will be used to compare the sample's behavior prior and after the intervention. Observations were conducted for two consecutive weeks, specifically during English lessons in Tuesdays and Thursdays. As shown in Table 1, the sample engaged in disruptive behaviors for five to six times through the lesson duration of 60 minutes. This shows that the sample frequently engages in disruptive behavior during English lessons. Typical disruptive behaviors include disturbing his peers, talking loudly and being inattentive.

DAY / TIME	FREQUENCY	AMOUNT
TUESDAY (0830-0930)	//////	6
THURSDAY (0830-0930)	/////	5
TUESDAY (0830-0930)	//////	6
THURSDAY (0830-0930)	/////	5

Table 1: Frequency of disruptive behaviors during Baseline 1

FREQUENCY GRAPH OF BEHAVIOR DURING BASELINE 1

```
FREQUENCY
10
 9
 8
 7
 6    ●           ●
 5        ●           ●
 4
 3
 2
 1
    Tuesday Thursday Tuesday Thursday
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Figure 2: Frequency Graph of behaviors during Baseline

Intervention Phase

The researcher initiated the intervention on the sample during this phase. The intervention was conducted for two weeks at the same time as the baseline and sample's behavior was recorded using a frequency table. The results in Table 2 show that there is a decrease in the frequency of the sample's engagement in disruptive behavior after the intervention. During this phase, it was observed that the sample was less likely to engage in disruptive behaviors such as disturbing his peers and he tried to pay more attention to the lessons.

DAY/ TIME	FREQUENCY	AMOUNT
TUESDAY (0830-0930)	///	3
THURSDAY (0830-0930)	//	2
TUESDAY (0830-0930)	///	3
THURSDAY (0830-0930)	///	3

Table 2: Frequency of behavior during   the intervention phase

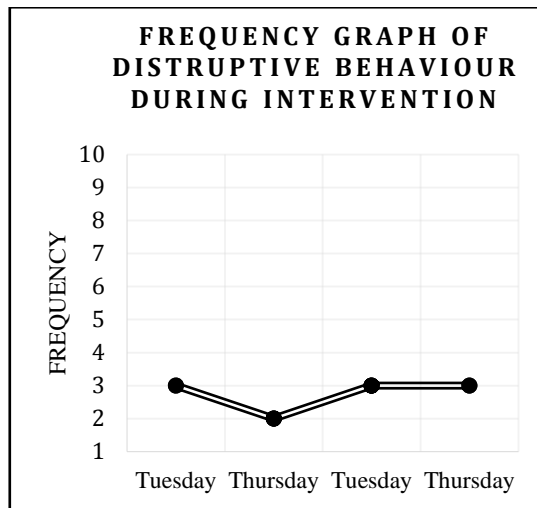**FREQUENCY GRAPH OF DISTRUPTIVE BEHAVIOUR DURING INTERVENTION**

Figure 3: Frequency Graph of Behavior during Intervention

Post intervention Phase (no intervention)

As shown in Table 3, during the intervention phase, the sample's disruptive behavior was reduced and this reduction was maintained even without positive reinforcement during the post intervention phase. In this regard, the sample only engaged in disruptive behavior two or three times during English lessons throughout two consecutive weeks.

DAY/TIME	FREQUENCY	AMOUNT
TUESDAY (0830-0930)	///	3
THURSDAY (0830-0930)	//	2
TUESDAY (0830-0930)	//	2
THURSDAY (0830-0930)	//	2

Table 3: Frequency of behavior during the withdrawal phase

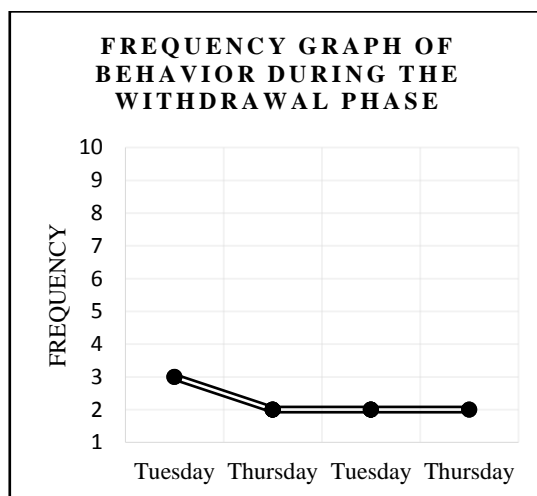**FREQUENCY GRAPH OF BEHAVIOR DURING THE WITHDRAWAL PHASE**

Figure 4: Frequency Graph of Behavior during the Withdrawal/ Post Intervention Phase

Data Comparison

The graph in Figure 5 shows the comparison of the frequency of behavior exhibited by the sample throughout the six-week study period, specifically during the baseline phase, the intervention phase and the intervention phase. The graph indicates a decrease in the frequency of behavior from baseline phase to the intervention phase. Furthermore, the reduction of disruptive behavior was retained during the post-intervention.

During the observation phase, the sample often engaged in disruptive behavior during English lessons. Subsequently, the graph shows a declining trend throughout the two weeks of intervention. During this phase, the teacher introduced the hand stamp method to control the sample's and other pupils' behavior during the English lessons. In general, the occurrence of disruptive behavior decreased and engagement of the whole class, including the sample throughout the lessons increased. This indicates that the sample was able to control his disruptive behavior for two consecutive weeks.

Furthermore, it was observed that the decrease in disruptive behaviors was sustained throughout the withdrawal/post intervention phase. This reflects that the sample engaged in less disruptive behaviors even when no reward is given.
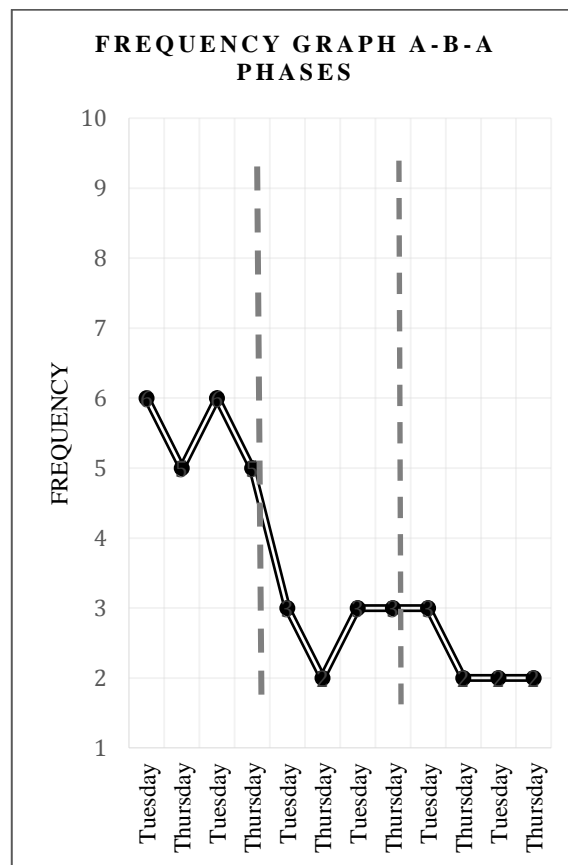

Figure 5: Comparison graph of the frequency of behavior throughout six weeks

DISCUSSION AND RECOMMENDATIONS

The results showed that there was a change in behavior during the intervention phase. This demonstrates that positive reinforcement techniques, specifically the hand stamp method can reduce disruptive behavior and increase the engagement of ADHD pupils during PDPC. Furthermore, the intervention is deemed as effective as it helps the teacher to deliver the lessons and control the classroom efficiently. This statement is supported by a study of Hashim, Razali & Jantan (2007) that posited that a controlled learning environment and classroom routine can be created with effective classroom management.

Based on the findings, this study puts forwards several recommendations for future studies to ensure sustained behavioral changes. First, the duration of the intervention could be extended or more conducted

regularly on the pupils as the pupils will require some time to familiarize themselves with the rules and methods of intervention. The researcher believes that by extending the intervention period, the pupil will be able to understand how the intervention and desired behavior can be sustained. This finding is supported by Mohd Fadli Mustafa Kamal, Mohd Hanafi Mohd Yasin and Mohd Mokhtar Tahar (2016) who stated that behavioral changes can be more effective if the intervention is carried out over a longer time period.

The next recommendation is that the intervention could be done more effectively with the collaboration between parents and other subject teachers to ensure the continuity of the behavior modification program. This suggestion was put forward by Mohamad Kassim Mohamed Yaseen, Mohd Mokhtar Tahar and Mohd Hanafi Mohd Yasin (2017), and supported by Mika Nur Cahyanti, Imanuel Hitipeuw, Abdul Huda (2014) who stated that successful behavior modification requires good cooperation from the school and the parents. Furthermore, teachers could also use different positive reinforcement to improve pupils' behavior throughout the PDPC session. This suggestion was also stated in Noor Azreena A.Aziz & Mohd Hanafi Mohd Yasin (2018) that there are many approaches that can be used to increase pupils' engagement and task completion in the classroom so that the behavior modification program can yield the most effective result.

Future studies could also apply this intervention method on pupils with other forms of learning disabilities such as *slow learner, autism and* Down syndrome to address behavioral issues they face in the classrooms.

CONCLUSION

Managing behaviors of pupils with special needs is one of the aspect that should be prioritized in controlling the learning environment. This is because controlled behavior can help teachers achieve their learning objectives and improve pupils' well-being life. Therefore, Special Education Teachers should possess the adequate knowledge, skills and readiness to manage the special needs pupils in schools. At the same time, it is important for all parties, including parents and multidisciplinary groups such as doctors and therapists to collaborate and work together to ensure special needs pupils could develop the appropriate behaviors. Educators are also encouraged to increase their knowledge and skills to meet the challenges of teaching in schools.

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