

## BEHAVIOURAL PROBLEMS AMONG DOWN SYNDROME CHILDREN: AN INTERVENTION-BASED STUDY

Huma Atta<sup>1</sup>, Ishrat Rehman<sup>2</sup>, Muhammad Umair<sup>3</sup>

### Authors' Affiliation

<sup>1</sup>Department of Psychology,  
Islamia College University  
Peshawar

<sup>2</sup>Department of Psychology,  
University of Peshawar, Peshawar

<sup>3</sup>Department of Medical Lab  
Sciences, University of Haripur,  
Haripur

### Corresponding Author

Ishrat Rehman  
Department of Psychology,  
University of Peshawar, Peshawar  
Email: [perli1988@gmail.com](mailto:perli1988@gmail.com)

### ABSTRACT

**Objective:** To find out the effectiveness of Dr. Stein behavioural modification strategies among Down syndrome children's behavioural problems.

**Material & Methods:** We took a group of individuals (aged 8-16) having Down syndrome from national special education complex, Peshawar. They were assessed through the behavioural problem index to give us an idea on their behaviour problems, those with a behavioural problem were kept in therapy for further sessions to help them improve.

**Results:** A treatment plan was made according to the extracted behavioural problems of Down syndrome children. Dr. Stein recommended behavioural modification treatment strategies were used for behavioural modification of Down syndrome children (Routine, reward, choice, redirection and consistency). Pre-intervention (M=69.11, SD=6.27) and post-intervention (M=61.33, SD=6.51) conditions;  $t(8) = 2.70, p = 0.027$ .

**Conclusion:** After the successful completion of 9 sessions with Down syndrome children, their behavioural problems were reassessed. Results indicated that Dr. Stein behavioural modification strategy is an effective treatment plan for the modification of behavioural problems among Down syndrome children.

**Key Words:** Behaviour, Down syndrome, Psychology, Treatment.

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### INTRODUCTION

Down syndrome (DS) is caused by increase in one extra chromosome. An individual having DS will have 47 chromosomes in one cell, while a typical cell should have 46 chromosomes. This genetic condition has been on a rise as one in every 691 births, a child is born with this condition. This condition occurs in almost every races and economic status and has become a worldwide condition that many scientists are working towards to find a cure.<sup>1,2</sup> Many people have started giving more attention to this subject, as organizations have stood up for the acceptance, right and inclusion of these individuals. Too name the few of many; The National Down Syndrome Society (NDSS) and The National Down syndrome Congress (NDSC). These societies and organizations are needed for those

individuals with DS to enhance their quality of life, realize their life aspirations, and become valued members of welcoming communities. There is a need for development of organizations and societies across Pakistan that helps these individuals feel important and valued.<sup>3,4</sup>

Numerous studies have explored the behaviour of individuals with Down syndrome, highlighting the impact of one's actions on those who differ from us. Research indicates that children with DS exhibit more behaviour problems, notably attention deficit, noncompliance, thought disorder, and social withdrawal.<sup>5-7</sup> Comparative studies emphasize the significance of behaviour, revealing that children and young adults with DS may display heightened behavioural challenges compared to their typically developing peers from childhood through adolescence. These

individuals exhibit more emotional and behavioral issues across various domains, with the exception of the anxious/depressed scale, when compared to a normative sample.<sup>8,9</sup> Notably, these behaviour changes often manifest as reactions to psychosocial or environmental stressors, such as illness, separation, or the loss of a key attachment figure. Intervention based studies in children with DS aimed at preventing psychological problems and promoting mental health.

## **MATERIAL AND METHODS**

An experimental study with pre-post study design was conducted. We took a group of individuals (aged 8-16) who had DS from National Special Education Complex, Peshawar. They were assessed through behavioural problem index to give us an idea on their behaviour problems, those with a behavioural problem were kept in therapy for further sessions to help them improve. To help us assess the group of individuals we used a behavioral problems scale. The behavioural problem scale consists of 30 items which is further made up of two subscales; internalize (withdraw or sad behaviour) and externalize (aggressive behaviours) behaviour problems. This behavioural problems index is based on an individual's responses by a primary care giver or a school teacher of the child. The Higher the score on the scale the more behavioural problems an individual has. There are 5 strategies for DS children to deal with their behaviour problems more effectively and these strategies were presented by Dr. David Stein. These conclude of: Routine, Reward, Choice, Redirection and Consistency.

### **Routine**

Small daily activities like getting dressed, meal times and bathroom activities help learn simple tasks more quickly and help them to avoid remembering verbal information that maybe a bit complicated. Having a constant routine as well as communicating with them through short statements of direction can help the children avoid any negative behaviour that may come from situations like these.

### **Reward**

Reinforcing good behaviour is a powerful motivation for children. Reward has many forms and is very good in persuading a person to do

something they might not like. Such forms conclude of; (a) a form of treat in response to a Childs attitude and behavior to certain situation such treats can be an activity that the child likes or a food/ sweet they would like. (b) a form of a promise in exchange for the individual to perform a certain behavior.(c) this can have a lasting effect if you simply just praise their good behavior. This gives a child a happy and positive feeling towards the behavior they might have done and continue to do it if they associate it with how someone praised them about it. It's always good to let them know of how proud someone is of them or a good job they have done on a daily basis as its more likely they will continue to do that activity such as eating all their food or picking after themselves.

### **Choice**

Feeling empowered and in control by giving an individual a choice helps them to minimize their negative behaviour triggers. Allowing a person to choice between what has been approved for them, will stop any attempt of a choice being forced upon them. They don't have to be too complicated and can be simple such as what fruit will they like to eat or what shoes they would like to wear. Flexibility in discipline is also important. Children with DS longing for attention or a reaction will often misbehave. This should not be acknowledged as any reaction either laughter or anger, is all they are seeking for. Minor inappropriate behaviour should be ignored as its better than reacting to it as this would simply reward the inappropriate behaviour you are preventing.

### **Redirection**

Individuals with DS often engage in sensory-seeking behaviours as a way to self-soothe during times of stress or express frustration or unhappiness. Sensory input, derived from our five senses, serves as a means for them to calm themselves. While the chosen sensory-seeking activities may sometimes be bothersome or displeasing, and certain behaviours may emerge due to boredom or a desire for attention, such as frequently touching others or objects, jumping, and making loud noises. The most effective approach to address sensory seeking involves directing their leisure activities, including spending time with them, engaging in play, reading, or colouring. These behaviours may

exhibit predictability, allowing for prepared responses by introducing alternative activities or redirecting individuals toward positive engagements as triggers are recognized.

**Consistency**

Consistency is an important tool in modifying and improving the individual’s behaviour. Every child tests boundaries making unconscious notes of how their behaviour is dealt with and how it affects them and makes them feel. Being consistent doesn’t sound very challenging however Dr. Stein suggests that we, humans tend to notice the bad over the good and stresses importance of a united and consistent front. It means that siblings, teachers and caregivers should be on the same side regarding their strategies of dealing with negative behavior.

Once consent was taken from concerned department, teachers and participants, they were given a brief overview about: the study propose, the therapy process, the session’s timings, the session duration and the number of sessions. Data of behavioural problems of DS children was taken from their concerned class teachers before and after intervention. Once rapport was built with the children then a further sessions were planned according to their behavioural problems. Two session peer week were kept according to the

availability and shortage of time ,In each session one behavioural modification strategy was used with DS children in group form, respectively routine, reward, choice, redirection and consistency. After the completion of 9 therapeutic sessions successfully with DS children, data was collected again regarding their behavioural problems from their concerned class teachers to recognize, note and find out the effectiveness of Dr. Stein behavioral modification strategies.

**RESULTS**

There was a significant difference on the scores of the behavioural problems index for pre-intervention (M=69.11, SD=6.27) and post-intervention (M=61.33, SD=6.51) conditions;  $t(8) = 2.70, p = 0.027$ . (**Table 1**)

There was a significant difference on the scores of behavioural problems index for pre-intervention (M=35.44, SD=3.71) and post-intervention (M=31.22, SD=3.49) conditions;  $t(8) = 2.81, p = 0.027$ . (**Table 2**)

There was a significant difference on the scores of the behavioural problems index for pre-intervention (M=36.22, SD=3.63) and post-intervention (M=28.78, SD=3.63) conditions;  $t(8) = 3.96, p = 0.004$ . (**Table 3**)

**Table 1: Paired Sample t-test of DS Children on Behavioural Problems Index (N=9)**

Conditions	M	SD	t(2)	Sig	95% CI	
					LL	UL
PreBPI	69.11	6.27				
PostBPI	61.33	6.51	2.709	0.027	1.15	14.39

**Table 2: Paired-sample t-test of DS children on External Behavioural Problems Index**

Conditions	M	SD	t(2)	Sig	95% CI	
					LL	UL
PreBPI-EX	35.44	3.71				
PostBPI-EX	31.22	3.49	2.81	0.023	.678	7.67

**Table 3: Paired-sample t-test of DS children on Internal Behavioural Problems Index**

Conditions	M	SD	t(2)	Sig	95% CI	
					LL	UL
PreBPI-IN	36.22	3.63				
PostBPI-IN	28.78	3.63	3.96	0.004	3.11	11.77

## DISCUSSION

The current study employed intervention based study to conduct behavioural problems of DS children and how to improve / modify these behavioural problems by applying Dr Stein's behavioural modification technique. These techniques remain successful for children with DS as the collected findings are supported identified that outcomes for children with DS are improved by early interventions, Down syndrome education international (USA 2019) studied 5 different cases with 5 different individuals.<sup>10,11</sup> The results showed that use of interventions that are different remained successful for modifying challenging behaviors for the DS children. Such interventions included; Antecedent based strategy, Reinforcement, Prompting, Correction, different reinforcement procedure and reinforcement following the omission behavioural strategies. Other studies showed that individual intervention strategies are often applied in combination as a positive behaviour plan for the individuals. This type of research was done by Carr et al.<sup>12</sup> A study addressed that self-stimulatory behaviour is a consequence strategy often due to differential reinforcement of omission of behaviour (DRO) this kind of study was conducted by Flaska in 1978.<sup>13</sup> Another study indicated that DRO (differential reinforcement of the omission of behaviour) involves systematically delivering reinforcement following a specified interval of time during which the target behaviour is not emitted.<sup>14</sup> A study conducted by Patel et al., concluded that early behavioural problem detection among DS children enable professional and their parents to prevent the occurrence of further behavioural problems and their long term adverse effects.<sup>15</sup>

## CONCLUSION

The current study concluded that behavioural modification strategies remained successful for the behaviour problems of Down syndrome children. It would be a contribution in the field of children behaviour problems modification such as anger, disobedience, fearfulness, anxiousness, sadness or depression, temper loses clinginess and worries.

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