



Case Report

Psychological intervention for specific learning disability: A case report

Neelam Verma^{1*}

¹Clinical Psychologist, Nur Manzil Psychiatric Centre, Lucknow, India

*Corresponding author email: neelampsycho.86@gmail.com

How to cite this article: Neelam Verma. Psychological intervention for specific learning disability: A case report. IAIM, 2014; 1(4): 86-90.

Available online at www.iaimjournal.com

Received on: 20-11-2014

Accepted on: 01-12-2014

Abstract

Cognitive deficits resulting in poor scholastic performance are common among children with specific learning disabilities. Current study was carried out to identify areas of deficits leading to poor academic performance followed by a home based remediation program for rehabilitation of impaired skills. Single case study method was opted and assessment of academic skills was done using NIMHANS Index for Specific Learning Disability (SLD). Assessment findings revealed significant impairment in scholastic skills and attention processes. Management of identified deficits was planned and weekly sittings of remediation were provided for six months. Monitoring of the rehabilitation package was done on every visit using charting method. Improvement in academic skills/ performance was seen in later sessions.

Key words

Specific learning disability, Cognitive Impairments, Scholastic decline, Remedial training, Manualized cognitive retraining.

Introduction

Learning disabilities are generally a composition of deficits in certain skills such as basic reading skills, reading comprehension, written expression, receptive and expressive language i.e. listening and speaking respectively, mathematical reasoning and mathematical calculation. Many of these deficits are generally present together and type of disability may vary

as per their presence such as disorder of reading, disorder of writing, disorder of spelling and disorder of mathematical skills. Plenty of literature is available on origin and controversies involved in the diagnosis of specific learning disabilities; however, researchers have proved their efficacy to advocate the term adequately. In past some time there has been a boom in researches related to assessment and rehabilitation of such disabilities; however,



there is lot more to explore in the mentioned condition. Rehabilitation programs for sufferers of Specific Learning Disabilities have been found to be effective and current research was an attempt to prove the efficacy of available programs/ treatment modalities.

Case report

A nine years old boy was brought by his parents with the complaint of poor academic skills resulting in frequent deterioration in academic performance and failure in grade III. Owing to the complaints psychological assessment was planned. Basic assessment of his comprehension and general awareness skills was done during clinical interview. Samples of reading and writing ability were also taken. Overall basic assessment did not suggest any intellectual deficit; however, learning difficulties were found to be prominent. Formal assessment of intellectual functioning and learning disability was done using Malin's Intelligence Scale for Indian Children (MISIC) [1] and NIMHANS Index for Specific Learning Disability (SLD) [2] respectively. On formal assessment, his intellectual functioning was found to be above average and learning disability was significant for reading, writing and spellings. Impairment in attention skill was also identified. Psychological management was planned and sessions were spread into 24 sittings; once a week. Simultaneous home based intervention program was also initiated. Areas of deficit identified on SLD assessment were targeted for rehabilitation. Weekly assessment of target behaviors i.e. poor scholastic/academic skills and poor cognitive skills was done using behavioral charting to see efficacy of remedial aids and cognitive retraining.

The therapeutic module

Therapeutic work was started with psycho education of parents. They were explained

about child's clinical condition and its association with academic difficulties leading to deterioration in scholastic performance. Importance of treatment adherence and compliance toward therapeutic work was explained to them. Areas of deficits on SLD assessment were opted as target behaviors for the therapy. Strategies to deal with them were explained as well. Each strategy was practiced in subsequent sessions and taught to the parents. A parallel home based intervention program was also initiated using the same strategies. Target behaviors for the remediation involved:

- 1) Improving attention skills
- 2) Enhancing reading skills
- 3) Enhancing writing skills
- 4) Improving spelling ability

In order to improve attention skills various methods of cognitive retraining were used like letter/color/number cancellation tasks, coloring tasks, auditory continuous performance and games like spot the difference between same looking pictures. Remediation of reading skills was done using whole word approach, working on improving phonetic skills, using reading drills and paired reading. Improvement in writing skills involved improvement in hand writing, improving writing speed, reducing punctuation errors and improving vocabulary to use mature words while writing. In order to do the same strategies for improving writing abilities were used like regular one page writing with use of timer (to control time limit while writing), proof reading and self correction, inserting and correcting punctuations in running paragraphs along with regular learning of new words from dictionary. For improving spelling skills various spelling games were used such as scrabble, find the hidden words, crossword puzzles etc.

Results and outcome of therapy

Improvement was noticed in child's performance by reviewing parent's weekly reports. No improvement was reported in first



week of therapy; however, improvement was noticed after second week onwards. Weekly charting of target behaviors revealed improved attention as seen on attention tasks where child took less time to complete the task as compared to earlier. Improvement in reading skills was noted from the fluency of reading and reduced hesitation. Improvement in spelling ability could be noted as he took less time to solve puzzles, reduced spelling errors and also he could identify words in a word grid more quickly. Improvement was also noted in child's writing skills as neatness was seen in his hand writing, speed of writing also improved with help of timers and punctuation errors reduced significantly. Weekly progress of therapy and improvement in target skills was as per **Graph - 1**.

Analysis of graph

The graphical pattern clearly shows significant decrement in time taken for writing particular amount of text; thus shows improved writing speed over the therapy weeks. Frequency of hesitation (while reading) decreased significantly in later weeks of therapy. The child took less time to complete attention tasks over therapy weeks that indicates improved attention and concentration. Punctuation errors were noted less in the last week of therapy that indicates improved quality of writing. Also, spelling errors were noted to be reduced as therapy progressed in later weeks. Improvement can be seen in target behaviors by comparing trends of second week and sixth week of the shown graph that indicates significant progress of the therapy.

Discussion

Learning disabilities are described as a group of disorders that are characterized by inadequate or insufficient development of specific academic, language and speech skills [3]. Learning disabilities are generally described

under broad categories of information or learning processes that involve input (receiving/perceiving information through senses), integration (interpretation of the received stimuli), storage (repetition and memorization of stimuli) and output (the stage where stored information is recalled or recollected) [4]. Deficits in any of the areas of information processing may contribute to different types of specific learning disabilities and a person may have one or more than that at the same time [5]. Individuals with such disabilities experience significant impairment in all areas of academics which cannot be accounted due to low level of intellectual functioning, visual deficit, neurological damage or inadequate educational environment [6]. There is plethora of researches available displaying important findings about such treatment modalities and shows great success of the same. Researches also indicated effectiveness of neuropsychological rehabilitation for treating learning disabilities and are well established [7]. Current case work included two types of treatment modalities i.e. remedial training and cognitive retraining. The aim of the case work was to work on child's cognitive and academic skills to improve his academic performance. The child was given intensive remedial sessions along with a parallel home based remediation program supervised by his parents. Weekly review of progress chart revealed improvement in target behaviors. If we review the literature various studies have shown changes in brain functioning after intensive remediation programs given to such individuals. Studies using functional magnetic resonance imaging (fMRI) have shown vigor of neuroplasticity [8]. This is a process by which new connections are made among neurons by themselves. Researches comparing two experimental groups indicated that brain function changes were evident in neuro imaging of those who attended intensive remedial



program as compared to those who were not given such treatment. Reduced activation in left parieto-temporal cortex in children that has been found to be characteristic of learning disabilities [9] was found to be increased after rigorous training and remediation program for learning disabilities [10]. In recent years there has been a boom in researches proving efficacy of psychological management for learning disabilities; however, there have been different purposes to conduct them. Few indicated importance of particular treatment modality where others advocated efficacy of results based on type and severity of learning disability. Some researchers showed efficacy of computerized training for treating learning disabilities [11]. On the other hand manualized treatment gave well established results in such conditions [12]. Plenty of literature is available in this field; however there is lot more to find out in future researches.

Conclusion

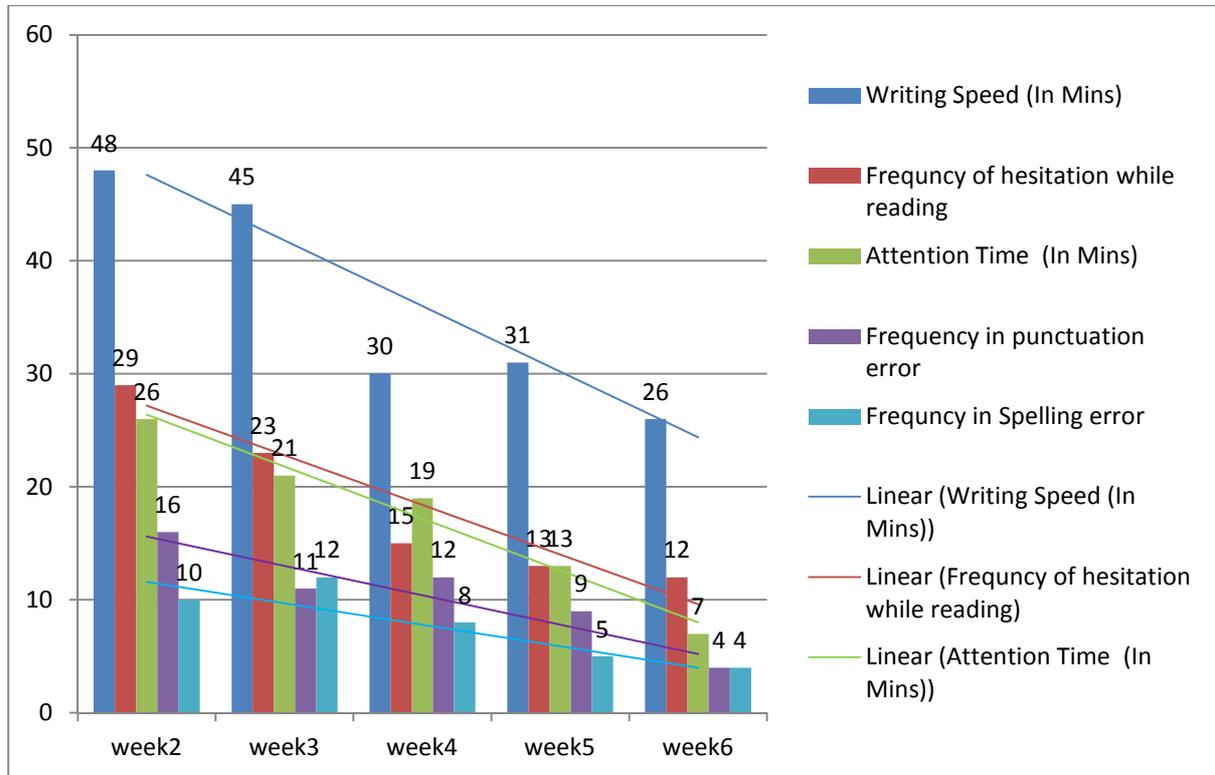
Combination of Manualized Cognitive Retraining Techniques and Remedial Training can benefit individuals with Specific Learning Disability and give best results in improving scholastic performance. Manualized techniques are also important and beneficial for those who cannot bear the cost of computerized retraining. Also, a parallel home based intervention program gives strength to the therapeutic process and ensures better outcome. In current case, improvement was noticed in the target behaviors, thus efficacy of both treatment modes along with parallel home based retraining program could be proven.

References

1. Malin AJ. Malin's Intelligence Scale for Indian Children- Manual. Indian Psychological Corporation, 1969.

2. Rao S, Subbakrishna DK, Gopukumar K. NIMHANS Neuropsychology Battery Manual. NIMHANS, Bangalore, 2004.
3. Wadsworth T. Childhood Voyages in Development; 3rd edition, 2008, p. 387. Retrieved 2012-12-19.
4. National Dissemination Center for Children with Disabilities (NICHD), 2004. Accessed May 11, 2007.
5. Amanda Kirby speaking on the co-occurrence of learning difficulties. dysTalk. Retrieved 2009-04-22.
6. Sadock B.J., Sadock V.A. Synopsis of Psychiatry; Behavioral Sciences/Clinical Psychiatry. 10th edition, Wolters Kluwer (India) Pvt. Ltd., New Delhi, 2007.
7. Malhotra S, Rajender G, Sharma V, Singh TB. Efficacy of cognitive retraining techniques in children with learning disability. Delhi Psychiatry J, 2009; 12(1): 100-106.
8. Tom Valeo. Dyslexia Studies Catch Neuroplasticity at Work, The Dana Foundation, New York, 2008.
9. Temple, et al. Disruption of the neural response to rapid acoustic stimuli in dyslexia: Evidence from functional MRI. Proc Natl Acad Sci USA, 2000; 97: 13907-13912.
10. Temple, et al. Neural deficits in children with dyslexia ameliorated by behavioral remediation: Evidence from functional MRI. Proc Natl Acad Sci USA, 2003; 100: 2860-2865.
11. Talbot F, Pépin M, Loranger M. Computerized cognitive training with learning disabled students: A pilot study. Psychol Rep. Dec, 1992; 71(3 Pt 2): 1347-56.
12. Malhotra S., et al. Comparative Efficacy of Cognitive Retraining Techniques and Remedial Training in Children with Learning Disability, Delhi Psychiatry J, 2010; 13(2): 334-338.

Graph – 1: Graphical presentation of weekly progress of target behaviors.



Source of support: Nil

Conflict of interest: None declared.