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The Efficacy Of Brain Gym Protocol On Anxiety In Adolescents With Dyslexia

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*Abstract :*The objectives of this study were to determine Effectiveness of Brain Gym protocol on Anxiety in adolescents with Dyslexia. METHODS: Thirty participants between the age of 12 to 16 years with the diagnosis of dyslexia and having symptoms of anxiety were selected. Participants received Brain Gym Activity for 30 min per day for 3 days per week, for duration of 5 weeks. After that pre and post intervention assessments were done using Screen for Child Anxiety Related Disorders (scared)-child Version and parent Version. The study concluded that children were showing anxiety on pre-assessment. The similar level of anxiety was observed by their parents. After receiving Brain Gym Activity as an intervention, their anxiety level reduced. So, the Brain Gym Activity is an effective intervention to treat the symptoms of anxiety.

Key Words: Anxiety, Dyslexia, brain gym

I. INTRODUCTION

Worldwide, approximately 15% to 20% of the population have language learning disabilities, of which 70% and 80% have dyslexia [2]. The International Association for Dyslexia estimates that an estimated 15% to 20% of the world's population has at least one dyslexia or other condition [3].

Dyslexia is a specific neurologically induced learning disability. It is characterized by difficulties in accurate and / or fluent word recognition, and poor spelling and decoding skills . These difficulties are usually due to a lack of phonological elements in the language. This is often unexpected in terms of providing other cognitive skills and effective teaching in the classroom. Secondary consequences are reading comprehension problems and poor reading experience, which can hinder the growth of vocabulary and background knowledge. "[1]

Jerome J. Schultz explains in the IDA bulletin "The Dyslexia Stress Anxiety Connection" that children with dyslexia have many emotional and social difficulties. Fear is one of 4,444 and manifests itself in many ways. It can be situational (that is, specific to the type or class of concerns, such as travel or social situations). People with dyslexia can experience significant anxiety in situations where they are making

mistakes, being ridiculed, pressured by their parents, stigma, or feeling stupid in front of others. fear. Severe anxiety or anxiety in this child causes phobias such as social anxiety disorder or social phobia, and can generalize anxiety disorder or general phobia [4].

This anxiety in children can be measured by depression. Which can be evaluated in, State Trait Horror Inventory (STAI) [5] , Depression Anxiety and Stress Scale (DASS) [6] And children's screen anxiety-related disorders (SCARED) CHILD version is and ELTERN version [7] .

How dyslexic patients treat it, and the effectiveness of coping with it, has received little attention in over the last 100 years. The impact of coping with and coping with dyslexia in school should not be underestimated. There are studies using standardized tests for self-esteem, coping, and depression [8]. However, few studies have used The Brain Gym protocol which is a exercise-based program, to improve academic and behavioural needs by promoting whole-brain learning.

Denison and Denison developed the Brain Gym in the 1970s, also known as an educational kinematics. It consists of a series of movements of that activate the brain, promotes neurological remodeling, and facilitates learning throughout the brain. The program is based on the notion that learning problems arise when different parts of the brain and body work out of coordination, thereby hindering a person's ability to learn (Dennison & Dennison, 1994). To overcome this learning block, the program is a variety of simple, designed to help improve the integration of specific brain functions and body movements and re-educate the 's mind and body. Movement is recommended. Easy to learn. [9]

II. METHODOLOGY

2.1.TYPE OF STUDY: experimental study design.

2.2.30 dyslexic children showing anxiety was selected for the study. Children were screened according to the selection criteria. Children between the age group of 12 years to 16 years, who were having dyslexia, children, and parents both understanding the questionnaire and should be able to respond appropriately and who were willing to participate were selected for the study. All the children's parents filled and submitted a prior informed consent form. Brain Gym Activity protocol consisted of 30 minutes per day for 3 days in a week for total of 5 weeks, which included 8 exercises namely Cross Crawl, Neck Rolls, The Rocker, Belly Breathing, Brain Buttons, Thinking Cap, Hook-ups, and Positive Points. Outcome Measures: Measurements were taken at the baseline and at the end of the study that is after 5 weeks. Level of anxiety was assessed using Screen for Child Anxiety Related Disorders (SCARED) CHILD Version. The same questionnaire in a form of Parents Version that is Screen for child anxiety related disorders (SCARED) Parent version was given to parents to confirm the level of anxiety. [11] Data Analysis and Results: Data was analyzed using the IBM Statistical Package of Social Sciences (SPSS) version 28 software for windows. Descriptive statistics for all outcome measures were expressed as mean, standard deviations and test of significance such as t test. The confidence interval was set at 95% and data was considered statistically significant with $p<0.05$ and highly or considerably significant with $p<0.001$. Out of 30

participants, 18 participants (60%) were male, and 12 participants (40%) were female, receiving treatment for 5 weeks. The mean value of SCARED-CHILD version before intervention was 28.5 and SD was 8.987, and after intervention was 21.12 and SD was 6.821. On comparing scores of pre and post intervention, it was observed that this difference was significant.

Table 1.1: Comparison of Pre-Intervention and Post-Intervention scared child Version

	Mean	**SD**	**Paired 't' test value**	**'p' value**	**Result**
Pre-Intervention	28.5	8.987	11.769	<0.001	Extremely Significant
Post-Intervention	21.12	6.821			

III. DISCUSSION

The aim of this study was to determine Effectiveness of Brain Gym protocol on Anxiety in adolescents with Dyslexia.

To examine whether brain gym protocol is effective on anxiety in adolescents with dyslexia, Thirty participants between the age of 12 to 16 years with the diagnosis of dyslexia and having symptoms of anxiety were selected. Participants received Brain Gym Activity for 30 min per day for 3 days per week, for duration of 5 weeks. After that pre and post intervention assessments were done using Screen for Child Anxiety Related Disorders (scared)-child Version and parent Version.

According to the results of this research, Significant difference was seen in pre and post scores scared-child Version and parent Version. Pre intervention and post intervention mean for child Version was 28.5 with Standard deviation 8.987 and 21.12 with Standard Deviation 6.821with p value <0.001.

Julia et al, conducted research on the anxiety levels of dyslexic students. They discovered that anxiety levels in dyslexic children in higher education were significantly higher than anxiety levels in students without learning disabilities. This anxiety is not limited to state anxiety and academic task anxiety, but it also extends to many social situations. They recommend that emotional well-being be assessed as part of the need assessment for dyslexic students entering higher education.[10] When a learner is stressed, he or she can enter a homo lateral learning state, in which the dominant brain hemisphere takes control of most mental processes.

Under stress, the non-dominant hemisphere shuts down up to 75% or 80% of the time. As a result, the learner no longer has full access to the non-dominant hemisphere's functions. There is one-sided learning. Brain Gym can help to overcome these learning barriers by consciously activating the entire brain/body system and decreasing the fight/flight response. When learning is simple and stress-free, the learner regains his or her natural interest in learning and their self-esteem improves.[6]

IV. CONCLUSION

The children exhibited anxiousness throughout the pre-assessment, according to the results of the study. Their parents noticed that they had similar levels of anxiety. Their anxiety levels decreased after getting Brain Gym Activity as a 6-week intervention. As a result, the Brain Gym Activity is a successful treatment for anxiety symptoms. Because the intervention is helpful in reducing anxiety symptoms, the null hypothesis is rejected, and the alternative hypothesis is accepted.

REFERENCES

1. Peer L, Reid G. Introduction to dyslexia. David Fulton Publishers; 2013 Aug 21.
2. Hyatt KJ. Brain Gym®: Building stronger brains or wishful thinking?. Remedial and special education. 2007 Mar;28(2):117-24.
3. Ziring PR, Brazdziunas D, Cooley WC, Kastner TA, Kummer ME, De Pijem LG, Quint RD, Ruppert ES, Sandler AD, Anderson W, Arango P. Learning disabilities, dyslexia, and vision: A subject review. Pediatrics. 1998 Nov;102(5):1217-9.
4. Keinath K. The Effects of Brain Gym® Activities on Second-Grade Students' Academic Performance and Handwriting Skills.
5. Dennison PE, Dennison G, Maier C. Brain gym. VAK, Verlag für Angewandte Kinesiologie; 1990.
6. Arbianingsih A, Huriati H, Hidayah N, Musnayni S, Afiifah N, Amal AA. Brain Gym Effectively Reduces Anxiety in School-and Preschool-Aged Children in Hospitals. Jurnal Keperawatan Indonesia. 2021 Dec 3;24(3):140-8.
7. Dr Hetal P Patel, Dr. Keerthi Rao, Dr. Nilashri Naik. The effectiveness of brain gym activity on anxiety in children with dyslexia. Int J Appl Res 2019;5(2):195-198.
8. Kalyvioti K, Mikropoulos TA. Virtual environments and dyslexia: A literature review. Procedia Computer Science. 2014 Jan 1;27:138-47.
9. Rello L, Bayarri C, Otal Y, Pielot M. A computer-based method to improve the spelling of children with dyslexia. InProceedings of the 16th international ACM SIGACCESS conference on Computers & accessibility 2014 Oct 20 (pp. 153-160).
10. Carroll JM, Iles JE. An assessment of anxiety levels in dyslexic students in higher education. British journal of educational psychology. 2006 Sep;76(3):651-62.
11. Bailey KA, Chavira DA, Stein MT, Stein MB. Brief measures to screen for social phobia in primary care pediatrics. Journal of pediatric psychology. 2006 Jun 1;31(5):512-21.