

# A Single Blind Single Arm Clinical Study to See the Effect of Constitutional Homoeopathic Medicines in the Management of Learning Disabilities viz Dyslexia and Dysgraphia of Age Group 6-15 Years

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## ABSTRACT

Learning disability is a disorder of the basic physiological processes involved in using or understanding language written or spoken which manifest itself in imperfect ability to listen, speak, read, write, spell or do mathematical calculations. [1] In this study homoeopathic medicine was prescribed to the 30 children having learning disability of age group 6 to 15. Synthesis repertory was used for repertorisation of cases and to find out constitutional medicine. Single dose of medicine was prescribed to every child at the interval of 10 to 15 days in required potency. Pre assessment of each child was done with "Is It Dyslexia" free online evaluation by Davis Dyslexia Association. Visual Analogue Scale was used for before and after treatment analysis. Study showed significant result with mild to moderate improvement in 30 patients.

**Key words:** Constitutional Medicine; Homoeopathy; Learning Disability

## INTRODUCTION

Learning Disability is a term referred to heterogeneous group of disorders manifested by significant difficulties in acquisition and use of listening, speaking, reading, writing, reasoning and mathematical abilities. [2] It may be seen in mental retardation, Attention Deficit Hyperactivity Disorder, medical factors like Premature birth, Diabetes mellitus during pregnancy, Environmental deprivation, Maternal smoking etc are also involved in development of learning disability. [3] Dyslexia and Dysgraphia come under category of specific developmental disorder. Dyslexia is characterized by failure to develop adequate reading skills and delay in learning to read which become apparent between the ages of 6 to 9 years. Clinical feature includes omission, distortions or substitutions of words, long hesitations,

reversal of words or simply slow reading, writing difficulties are often coexisted with dyslexia. Dysgraphia is failure to develop adequate writing skill and often coexist with dyslexia and mathematical disorder, it is apparent between ages of 7 to 10 years. Clinical features include difficulties with spelling, syntax grammar and composition. [4] Prevalence estimated in dyslexia and dysgraphia is 5-15% in general population with 4:1 male predominance. It is associated with low socio economic status and large family size. Prevalence varies with geographical region. In numerous neuro-imaging studies it has been shown that anomalous cerebral morphology in the bilateral, frontal and left temporoparietal regions are responsible for reading and writing disorder. Anomalies of these structures which play role in reading is said to be the cause of reading disorder.

Normally there is asymmetry in planum temporale but in patient of reading disorder it is symmetrical. Magnetic resonance imaging studies have suggested variations in the morphology of corpus callosum responsible for learning disabilities. [5]

Materials and methods

**Study Settings** – study was carried out in Bharati Vidyapeeth Medical Foundation’s Homoeopathic Hospital, OPD, IPD setup along with homoeopathic pharmacy in Katraj, Pune.

**Study Design**– Single blind, single arm clinical study. Randomized without control group with sample of minimum 30 cases satisfying the case definition and inclusion and exclusion criteria were included with medical intervention period of 4 months and total time for conduction of study was a period of 1 and half year. The purpose of this study was to see the effect of constitutional homoeopathic medicines in the management of learning disabilities.

**Inclusion criteria** – Children having learning disability viz dyslexia, dysgraphia, from 6 to 15 years of age group of both sexes.

**Exclusion criteria**- Neurological problem with emotional disturbances like Depression, Mental retardation, Lack of

educational inputs, Non-Verbal Learning Disabilities, Dyspraxia, Autism.

**Study Procedure**-Informal assessment of patients was done with Davis dyslexia association free online evaluation. Constitutional medicine was prescribed to each patient. Synthesis repertory was used to repertorise every case. Five follow ups of each patient were taken at the interval of 15 days. Single dose of medicine in required potency was prescribed at every follow up. Most frequently used potencies are 30C and 200C,1M was prescribed in few cases. Study duration for prescribing medicine and follow up was minimum 3 months and maximum 4 months. Total period for conduction of study was 18 months. Visual Analogue Scale was used for assessment of improvement in patients after study. Criteria for the assessment of improvement according to VAS is as follows: No improvement-above 16, Mild- 9 to 15, Moderate-5 to 8, Marked-up to 4.

**Statistical analysis using VAS score of pre and post treatment**

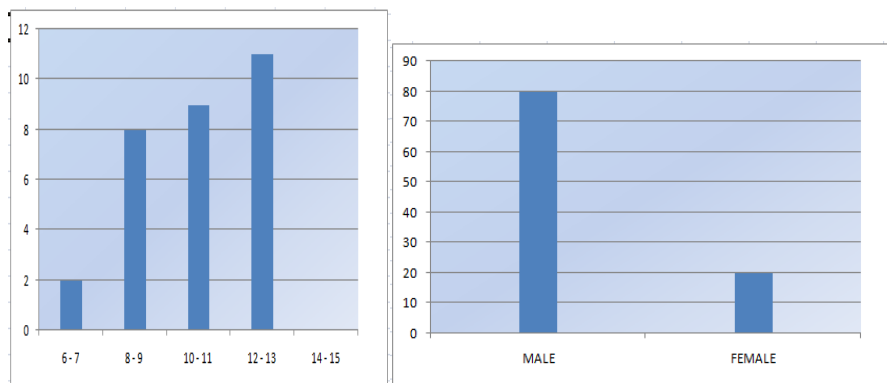
Statistical analysis was done by paired t-test. Graph Pad Prism version 5 software was used by using VAS (Visual Analogue Scale) for scoring before and after study outcome.

OBSERVATION	MEAN OF DIFFERENCES (B-A)	SD OF DIFFERENCES	SEM OF DIFFERENCES	p VALUE	t VALUE	Correlation coefficient (r)
	-4.767	1.851	0.3380	<0.0001	29	0.7347

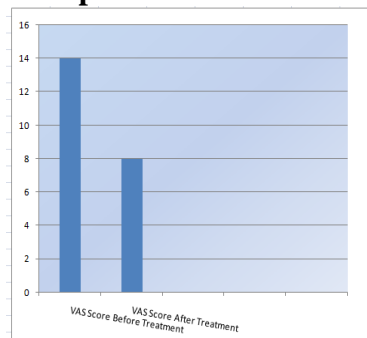
**OBSERVATION AND RESULT**

Total 30 patients were included from the age group 6-15 years. Total number of male patients in study is 24 i.e. 80% and female patients 6 i.e. 20%. Distribution of cases according to age group is as follows: 6-7 years-6.66%, 8-9 years-26.66%, 10-11 years-30%, 12-13 years-36.66%. After

statistical analysis of data at 95% confidence interval of degree of freedom 29 shows significant difference (p=<0.0001), thus null hypothesis is rejected, so statistical result shows constitutional homoeopathic medicines are effective in managing learning disability.



**Age Group Gender wise distribution**



**Treatment outcome**

## DISCUSSION

Awareness about Dyslexia and Dysgraphia is low amongst general population. This study was conducted on students of 6 to 15 years age group out of which 25 students were included from Marathi medium school. Parents of these children were unaware about reading and writing disorder. I approached Marathi medium schools for inclusion of patients in study, there I found special classes were being conducted for students who have reading and writing difficulty. Even In articles which I referred for literature review it's been mentioned that LD is found commonly in such schools. I noticed in school that children having learning disability are usually labeled as lazy and inattentive by teachers. In this study I found most of the students belong to low socio economic class which is one of the factor for development of learning disability. Both parents of students were working due to financial issues and so it was difficult to meet parents on every follow up. Parents are not able to give time to their child and to focus on his study as well, so I think and as mentioned in other articles low socio

economic conditions are responsible for learning disability. These students have difficulty in reading, Problem with handwriting, difficulty in understanding taught material along with this they frequently present complaint of weakness of memory and difficulty in concentration while studying. This study was single blind where parents and students both did not knew about the medicine given to them. A majority of children had shown improvement in all areas in 3 months duration of study. Total number of male patients in study is 24 i.e. 80% and female patients 6 i.e. 20%. Distribution of cases according to age group is as follows: 6-7 years-6.66%, 8-9 years-26.66%, 10-11 years-30%, 12-13 years-36.66%. Reading difficulty was seen in almost all the student, writing difficulty in around 86.66% of students, Concentration difficulty in 83.33% of students, weakness of memory in 86.66% and nearly all the students had slow comprehension .Mild improvements were seen in 63.33% of children, moderate improvements were seen in 36.66% of children. Improvement before and after treatment is assessed with the help of

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VAS(Visual Analogue Scale) which showed significant difference. Medicines frequently used were Lycopodium clavatum, Calcarea carb and natrum muriaticum in 200c potency being frequently used. 30c and 1M was used in few cases.

## CONCLUSION

Constitutional homoeopathic medicines have been proved effective in the management of Dyslexia and Dysgraphia and associated symptoms. Use of 200c potency has been found beneficial to patients. There was moderate improvement in 11 children and mild improvement in 19 children of learning disability. Study proved significant with p value less than 0.0001.

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