

ORIGINAL ARTICLE

Use of homoeopathic remedies in the management of learning disabilities

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ABSTRACT

Aims: The objective of the study was to assess the therapeutic usefulness of Homoeopathy in the management of LD, viz., dyslexia and dysgraphia, to ascertain the role of homoeopathic medicines and verify their characteristic symptoms in the management of various types of LD to establish verified characteristic symptoms of medicines used in the management of various types of LD.

Settings and Design: A 3-year randomised double blind case control study was carried out on 67 children between ages 8-12 years fulfilling the criteria of LD (ICD-10) for dyslexia and dysgraphia with a minimal observation period of one year. The study was conducted in three Marathi-medium schools in Mumbai.

Material and Methods: 67 children between ages 8-12 years fulfilling the criteria of LD (ICD-10) for dyslexia and dysgraphia were studied for a minimal observation period of one year. All received remedial education as it is the standard mode of management. 32 children constituted Group I and were administered the indicated homoeopathic medicine in the 200th potency in infrequent repetition while 35 children from Group II were given placebo. The children and the Remedial Educators who were the assessors were blinded for the study.

Statistical Analysis Used: *t*-test was done for statistical analysis.

Results: The children under homoeopathic treatment with remedial education showed an early response to remedial inputs and a statistically significant change in the indicators of dyslexia and dysgraphia. There was also a significant change in the co-morbid behavioural condition notably Attention Deficit Hyperactivity Disorder (ADHD). The study not only helped verify the characteristic symptoms of the remedies from *Materia Medica* useful in LD but also was able to report clinical symptoms which have not been reported in source books.

53.12% of children needed *Calcarea* salts. The other significant remedy indicated in 9.3% children was *Medorrhinum*, *Argentum nitricum*, *Calc-flour*, and *Natrum* salts were indicated in 6.25% children.

Conclusion: Homoeopathic intervention when combined with standard remedial education has a definite role in bringing about an early change in all parameters of LD. It also assists in bringing about a change in treating the co-morbid conditions, commonly Attention Deficit Disorder (ADD/ADHD). The improvements started simultaneously in most of the areas except in speed of reading and reading comprehension, repetition in reading and omission of punctuation in writing.

Keywords: Calcarea salts, Homoeopathic remedies, Learning disability

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INTRODUCTION AND REVIEW

Learning Disability (LD) is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in acquisition and use of listening, speaking, reading, writing, reasoning and mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to Central Nervous System (CNS) dysfunction and may occur across life span.^[1] It is also important to mention that these children have an average or above average intelligence quotient (IQ), minimal sensory impairment and no emotional disturbance.

Epidemiological studies of LD have been difficult, even in the most advanced countries. Nevertheless, in countries like USA, the percentage of LD children is about 1-5, upto 10% being mildly disabled.^[2] In countries like India, these difficulties are compounded by factors such as parental illiteracy and lack of adequate exposure to literacy related skills in the home environment. The magnitude of problems increase with the child's unfamiliarity with the medium of instruction at school and a different dialect of the language spoken at home.

During the last decade or two, there has been an increasing awareness and identification of children with LD in India. Despite this growing interest, there is still no clear data about its incidence and prevalence. Recent studies probing into the prevalence rate of specific learning disability have reported that 10-20% of children and adolescents have a language problem and/or a LD.^[3] Recent studies have identified large number of children with LD in rural areas of Kerala,^[4] indicating that LD could be prevalent in considerable numbers. Though the majority of surveys have been conducted on children studying in English medium, more recently studies are also carried in vernacular languages such as Hindi.^[5-7]

Intervention by means of remedial education is the only accepted means of managing this condition. This involves individual small group tutoring of language and meta-linguistic awareness, decoding, word study and comprehension with writing. Though remedial education is highly beneficial, it is very difficult to obtain remedial educators as there is a dearth of such educators in the country.

The problem of LD in English has been extensively studied; however, the phenomenon in our vernacular languages is not clearly understood. It is to be noted that very less/no work has been documented about

LD in the Marathi medium. The children included in this study were selected from three Marathi medium schools in Mumbai.

Since reading and writing in Marathi does not involve sounds but symbols, it is easy to recite the sequence but learning the symbols is another matter. To learners, such as children, many symbols look similar and it is not easy to discriminate one symbol from another. For example, in Devanagari, the symbols for the related sounds /b/ and /bh/ are visually distinct, whereas the symbols for the unrelated sounds /b/ and /v/ are visually close. Such differences can confuse beginners or the learning disabled.

Not much is currently known about how beginners or skilled readers of vernacular writing system are influenced by the design of the script. Studies done with normal and dyslexic readers of Hindi highlighted specific problems in Hindi spelling related to confusion in vowel length and vowel-placement and consonant clusters in ligature.

The current study has attempted to carry out a detailed analysis of errors made by children with dyslexia and dysgraphia, to understand the nature of difficulties experienced by them in processing words and sentences in Marathi.

Our Materia Medica and Repertories enumerate many symptoms like mistakes in writing, reading or calculations. Is there any role of Homoeopathy in their management and of the co morbid conditions? What would be the utility of these in our therapeutic work? Would it improve the receptivity to inputs, correct perceptions, effect better coordination among the different faculties and whether the results thus obtained, be permanent in nature? Would we be able to speak of a cure for a child with LD? These were some of the questions underlying the study.

MATERIAL AND METHODS

A sample size of 67 children of both sexes was selected from three Marathi medium schools in Mumbai from 4th, 5th, 6th and 7th standards. They had at least one type of LD diagnosed according to criteria stated in International classification of diseases (ICD)-10. Their intellectual ability, as assessed by Wechsler Intelligence Scale for Children (WISC) Test (Bhatt Mahendrika- Indian Adaptation),^[8] was in the normal range. Parents and children were

evaluated for their willingness to participate in the study, and their consent duly taken. Children with neurological problems, emotional disturbance like depression, mental retardation, or lack of educational inputs as causes of learning difficulty were excluded.

RESEARCH DESIGN [FIGURE 1]

It was a double blind randomised control clinical trial. The children and their parents as well as the remedial educators were not aware of the grouping whereas the Senior Research Fellow who conducted the homoeopathic treatment was aware. The status of the child was assessed by the remedial educators at 3, 6, 9 and 12 months intervals.

All the eligible students selected on the basis of inclusion and exclusion criteria were divided into two groups as per their enrolment.

Group 1: This group received homoeopathic therapy and remedial education.

Group 2: This group received placebo and remedial education.

RESULTS

Reading [Table 1]

Fifty-nine percent of children from the treatment group experienced no difficulty in reading at the end of one year as compared to 39% in placebo group. No. of children who did not exhibit changes was also lesser than placebo group.

Table 1: Prevalence and changes in reading				
Reading %	Absent	Better	No change	Increased
Treatment group	59*	30*	9	2
Placebo group	39	33	25	3

P=0.001355; *P*<0.05* Highly significant

Writing [Table 2]

It was seen that more than half of the total children had difficulties in writing. The changes were seen in both the groups, the changes were not statistically significant.

Table 2: Prevalence and change in writing				
Writing %	Absent	Better	No change	Increased
Treatment group	13	54	30	3
Placebo group	14	36	48	2

P=0.37608; *P*>0.05 Not significant

Written expression [Table 3]

Assessment of the essay written denoted that 67% of children in the total sample faced the problem. A sizable percentage improved, viz., 54% in the treatment group as compared to 29% in the placebo group. There was no change in 18% of children in treatment group as compared to 58% in the placebo group.

Table 3: Prevalence and change in written expression				
Written expression %	Absent	Better	No change	Increased
Treatment group	28*	54*	18	0
Placebo group	8	29	58	5

P=0.0002; *P*<0.05* Highly significant

Comprehension: Listening [Table 4]

Difficulty in listening comprehension was experienced by a substantial number of children, i.e. 96%. In the final assessment, 27% of children in the treatment group and 12% of children in the placebo group experienced no difficulty. 46% of children in treatment group faced less difficulty, vis-a-vis 35% of children in placebo group. The changes were ill sustained even in the treatment group and 27% children continued to have difficulty in listening comprehension.

Table 4: Prevalence and change in listening comprehension				
Listening comprehension	Absent	Better	No change	Increased
Treatment group	27*	46*	27	-
Placebo group	12	35	38	15

P=0.0012; *P*<0.05* Highly significant

Comprehension: Reading [Table 5]

This is another core area of difficulty in children with LD with 97% of children not being able to adequately comprehend what they read. Complete relief was marginal as is seen in 10% in the treatment group and 6% in the placebo group. Improvement was seen in 49% and 39%, respectively. A significantly large number of children from both the groups had not improved.

A demonstrable improvement was seen in

Table 5: Prevalence and change in reading comprehension				
Reading comprehension	Absent	Better	No change	Increased
Treatment group	10*	49*	34	7
Placebo group	6	39	45	10

P=0.014453; *P*<0.05* Significant

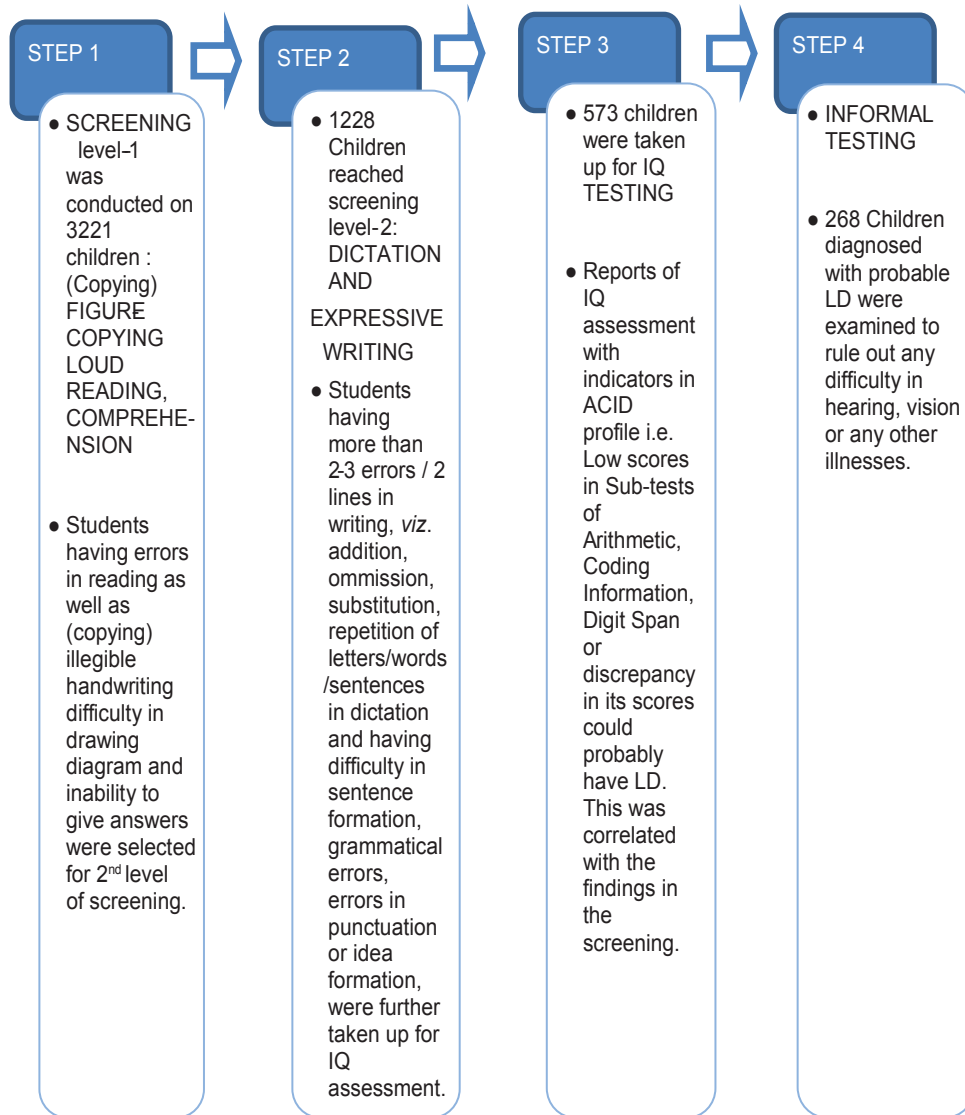


Figure 1: Research design

reading in almost all sub-areas. In writing, changes were seen in the areas of handwriting, reversal and addition. Listening comprehension demonstrated more change as compared to reading comprehension. Definite changes with homoeopathic intervention were seen in all the areas of writing expression.

Associated complaints [Table 6]

Co-morbidity is a known phenomenon with LD.^[2]

Table 6: Prevalence and changes in associated complaints in the population

ADD/ADHD %	Total (no.)	Better%	No change%
Treatment group	41	100*	0
Placebo group	31	45	55

P=0.000624; P<0.05* Highly significant. ADD: Attention Deficit Disorder; ADHD: Attention Deficit Hyperactivity Disorder

Thirty-six percent of children were diagnosed with Attention Deficit Disorder (ADD)/Attention Deficit Hyperactivity Disorder (ADHD). The results in the treatment group were very encouraging as all the children improved as compared to the placebo group where improvement was seen in 45%.

Indicated remedies

Fifty-three percent of children needed *Calcarea* salts. This is a very large number and must be deemed as highly significant. *Calc-silicata* was given to 19%, *Calc-carb.* to 12% and *Calc-phos.* to 9% children. Tables 7-10 enlist the detailed symptoms in each area covered by the various salts of *Calcarea* used in the study. These symptoms responded significantly to the administration of the remedy and hence may be considered as clinical symptoms of the remedy.

Table 7: Reading disability in sub-areas Calc. group

Reading	Calc carb.	Calc fluor.	Calc iod.	Calc mur.	Calc phos.	Calc sil.	Calc sulph.
Word recognition	√	-	-	√	√	√	-
Guesses at words	√	-	-	√	√	√	√
Consonant sounds	√	-	√	√	√	√	-
Vowel sound	√	-	√	√	√	√	-
Blends	√	√	√	√	√	√	√
Substitution	√	√	√	√	√	√	-
Repetition	-	-	-	-	√	√	-
Omission	√	√	√	√	√	√	√
Insertion	√	√	-	√	-	√	-
Transposition	-	√	-	√	-	√	-
Speed of reading-slow/fast	√	√	√	√	√	√	√

Table 8: Comprehension difficulty in Calc. group

Comprehension	Calc carb.	Calc fluor.	Calc iod.	Calc mur.	Calc phos.	Calc sil.	Calc sulph.
Listening	√	√	√	√	√	√	√
Reading	√	√	√	√	√	√	√

Table 9: Writing disability in Calc. group sub-areas

Writing	Calc carb.	Calc fluor.	Calc iod.	Calc mur.	Calc phos.	Calc sil.	Calc sulph.
Handwriting irregular	√	√	√	-	√	√	-
Spacing difficulty	√			√	√	√	√
Vowel/consonant substitution	√	√	√	√	√	√	-
Omission	√	-	√	√	√	√	√
Transposition	-	-	-	-	-	-	√
Reversal	√	√	√	√	√	√	√
Phonetic substitution	√	√	√	√	√	√	-
Addition	√	-	√	√	-	√	-

Table 10: Written expression disability in Calc. group sub-areas

Written expression	Calc carb.	Calc fluor.	Calc iod.	Calc mur.	Calc phos.	Calc sil.	Calc sulph.
Total length of essay	√	√	√	√	√	√	√
Sentence length	√	√	√	√	√	√	√
Omission of words	-	-	-	√	√	√	-
Omission of word endings	-	-	-	√	√	√	√
Punctuation	√	√	√	√	√	√	√
Ideas	√	√	√	√	√	√	-
Flow of ideas	√	√	√	√	√	√	-
Grammar	√	√	√	√	√	√	-

The only other remedy indicated in 9.3% children was *Medorrhinum*, *Arg-nit.* and *Calc-fluor.* were indicated in 6.25% children along with *Natrum* salts.

Homoeopathic treatment initiated changes in the symptoms of LD in the first 3 months. The improvement started simultaneously in most of the areas except in speed of reading and reading comprehension, repetition in reading and omission of punctuation in writing.

DISCUSSION

The study shows that LD as a disability is prevalent in our vernacular schools to a significant degree and needs urgent attention as a public health issue. The awareness amongst the parents and teachers of its presence and implications is low. There are no standard tests to evaluate the problem in an objective manner in the vernacular languages.

Maximum number of children have difficulty in the area of comprehension. The high percentage of children having this difficulty could be attributed to the fact that comprehension involves a number of cognitive skills such as understanding words, paragraphs, details and facts.^[9] It also involves recalling a sequence of events, identifying the main idea, making inferences and evaluating what is read. Difficulties faced in writing, which included the handwriting difficulties and spellings, were faced by more than half of the total sample and a similar number also faced difficulties in written expression.^[10] The percentage of children facing difficulties in reading was the least as compared to others probably because the phonological nature of the orthography of Marathi language.

Results show that the treatment group has shown the maximum improvement in all the areas as compared to placebo group. Except in writing, these differences are statistically significant as well. The assessment conducted after a year showed that some children in both the groups did not show any residual signs of disability at all. This is remarkable since it is common knowledge that disability never disappears; it is only compensated through training and efforts.

The percentage of symptoms that were absent i.e. the difficulty was not felt at all, was more in

the reading area, probably because reading skill is acquired earlier than any other academic skill, followed by listening comprehension, written expression, writing errors and lastly reading comprehension. The children in the treatment group had outshone in all areas. Concluding that the children after one year of treatment and remedial educators were totally relieved cured. It remains to be followed up on the long term and would need further research.

A majority of children had shown substantial improvement in all areas, i.e. one year post intervention. The percentage of children facing less difficulty was much more than that of the placebo group, the highest percentage being that of children committing lesser errors in writing which is a hard core difficulty faced by LD children. Reading comprehension, which is also very difficult for these children, also improved demonstrating that the treatment group was able to better decode what was read. More than half of the children in the treatment group, as compared to placebo group, also found expression and organization of ideas easier. This involves mastering of the ideas at the conceptual level and the higher faculties of the brain are involved in the organization of these ideas. More than half of the children in the treatment group did not experience difficulty in the reading area.

More significantly, the pace of change showed a vast difference between the two groups. In the treatment group, initiation of changes in the respective sub-areas was seen as early as 3 months in most of the children, except for reading comprehension, which showed the initiation of change in the 9th month. The initiation of change in the placebo group was observed in the 6th month and in some sub-areas, the first change was observed at the end of the year.

The best indicated medicine based on the totality of the presenting symptoms was prescribed in 90% of children in the treatment group. It was noted that apart from the symptoms of LD, these children presented with a lot of constitutional features. Hence, more polychrests were prescribed to majority of children in the study. Nine percent of children in the study were prescribed medicines based on the characteristic peculiar expressions presented by the child.

As stated above, 53% of children were prescribed Calc salts. Hence, it was possible to enumerate the symptoms of LD covered by Calc. salts. Though the repertories mention specific remedies for Learning Disabilities, the subareas are not detailed. Furthermore, this detailing is also poorly mentioned in the source books. The study would enhance the knowledge of Materia Medica. These would merit the status as a clinical symptom.

The indicated medicines were given in the 200th potency and single weekly repetitions were prescribed. Since there was a failure to establish changes in a large number of children, there is a possibility that the posology may need revision with either more frequent repetitions or employment of higher potency.

CONCLUSION

There is a definite role of Homoeopathy in the management of LD. Homoeopathic treatment needs to be holistically administered since LD is a developmental disability and usually elicits responses from the individual. The study has shown that constitutional approach is most satisfied to the children with LD. Use of the 200th potency and weekly repetition has been found satisfactory though in a few resistant cases, a more frequent repetition may be needed. The remedies prescribed brought about changes in the disability and the symptoms of disability were either significantly reduced or disappear. A close study of these would add to the clinical symptoms of these remedies. The study also facilitated the establishment of characteristic symptoms of Calc. group with respect to the sub areas of dyslexia and dysgraphia.

FURTHER WORK

A study which includes the exploration of the effect of miasmatic forces in determining the expressions and co-morbidities in LD will assist in formulating therapeutic strategies in enhancing the management of LD through homoeopathic intervention.

This study has shown that the constitutional approach is most suited to children with LD.

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ज्ञान प्राप्ति में अक्षमता के प्रबंधन में होम्योपैथिक दवाइयों का प्रयोग

उद्देश्य: अध्ययन का उद्देश्य डिस्लेक्सिया और डिस्ग्राफिया जैसे एलडी के निदान में होम्योपैथिक दवाइयों की लाभप्रदता की समीक्षा और विभिन्न प्रकार के एलडी के उपचार में प्रयुक्त दवाओं के विशिष्ट लक्षण के सत्यापन के लिए होम्योपैथिक दवाइयों की भूमिका का अध्ययन करना था।

समायोजन और प्रारूप: 8-12 वर्ष की आयु के 67 बच्चों पर एक तीन-वर्षीय डबल ब्लांड यादृच्छिक नियंत्रित अध्ययन किया गया जोकि डिस्लेक्सिया और डिस्ग्राफिया जैसे एलडी (आईसीडी10) की शर्तों को पूरा करते थे और न्यूनतम अवलोकन अवधि एक वर्ष की थी। यह अध्ययन मुंबई के तीन मराठी स्कूलों में किया गया।

सामग्री और विधि: 8-12 वर्ष की आयु के डिस्लेक्सिया और डिस्ग्राफिया जैसी अक्षमताओं (आईसीडी 10) की शर्तों को पूरा करने वाले 67 बच्चों पर एक वर्ष की न्यूनतम अवलोकन अवधि का अध्ययन किया गया। सभी को उपचारात्मक शिक्षा दी गयी क्योंकि यह प्रबंधन की मानक विधि है। समूह 'क' में 32 बच्चे थे जिन्हें अनिश्चित रूप से 200 शक्ति (पोटेंसी) की निर्दिष्ट होम्योपैथिक दवाई दी गयी जबकि समूह 'ख' के 35 बच्चों को प्लासिबो दवा दी गयी। बच्चे और उपचारात्मक शिक्षक, जो समीक्षक भी थे, इस अध्ययन से अनजान थे।

प्रयुक्त सांख्यिकी विश्लेषण: सांख्यिकी विश्लेषण के लिए टी-टेस्ट किया गया।

परिणाम: उपचारात्मक शिक्षा के साथ होम्योपैथिक उपचार प्राप्त करने वाले बच्चों ने दवाइयों के प्रति अच्छे संकेत दिए और डिस्लेक्सिया और डिस्ग्राफिया के सूचकों में सांख्यिकी रूप से महत्वपूर्ण परिवर्तन देखे गए। मटेरिया मेडिका के अटेंशन डेफिसिट हाईपरएक्टिव डिसऑर्डर (एडीएचडी) में विशेष रूप से रुग्णावस्था संबंधी अवस्थाओं में महत्वपूर्ण परिवर्तन देखा गया। अध्ययन द्वारा एलडी में लाभकारी दवाओं के विशिष्ट लक्षणों के सत्यापन में सहायता के साथ चिकित्सा में चिकित्सीय लक्षणों को रिपोर्ट करने में भी सहायता मिली जो अब तक स्रोत पुस्तकों में रिपोर्ट नहीं किए गए थे। 53.12% बच्चों को कैलकेरिया लवणों की आवश्यकता थी। अन्य महत्वपूर्ण उपचार (9.3% बच्चे) मेडोरिन्हम आर्जेन्टिकम नाइट्रीकम और कैलकेरिया फ्लोर थे और 6.25% बच्चों में नेट्रम लवण सही सूचित हुये।

निष्कर्ष: मानक उपचारात्मक शिक्षा के साथ होम्योपैथिक उपचार द्वारा एलडी के सभी मानदंडों में शीघ्र परिवर्तन लाने की निश्चित भूमिका देखी गयी है। इसके द्वारा रुग्णावस्था की अन्य अवस्थाओं, अटेंशन डेफिसिट डिसऑर्डर (एडीडी)/एडीएचडी के उपचार में भी सहायता मिलती है। पढ़ने की गति, समझ कर पढ़ने, पढ़ने में दोहराव और लेखन में विराम चिन्हों को छोड़ने पर लगभग सभी क्षेत्रों में एक साथ सुधार शुरू हो गए।

मुख्य शब्द: कैलकेरिया लवण, होम्योपैथिक दवाइयां, सीखने की अक्षमता