

Clinical profile of children with specific learning disability presenting to a psychiatric clinic

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ABSTRACT


Background: Specific learning disability (SLD) is highly prevalent in school going children. Early detection and remedial training may benefit these children. **Objectives:** Our study aimed to assess the clinical profile and co-morbid psychiatric disorders of children with specific learning disability in an Indian setting. **Materials and Methods:** 160 consecutive children who were diagnosed as SLD by psycho educational testing during the period of January 2014 to January 2015, in the Department of Psychiatry, at Amala Institute of Medial Sciences, Thrissur were taken as the sample. Subjects were interviewed using a structured questionnaire to assess socio-demographic details. Edinburgh Handedness Inventory was used to assess handedness and Family Interview of Genetics studies were used to systematically assess family history. Statistical analysis was done using descriptive statistics and chi-square tests using SPSS statistical software version 16. **Results:** Specific learning disability was more common in boys (82.5 %) and is more commonly referred for evaluation in the age group of 10-15 years (56.2%). Sixty per cent children had co-morbid ADHD. Other co morbid conditions were conduct and oppositional defiant disorder (20%), anxiety disorder (15%) and depression (7%). We found a significant association between dysgraphia, dyslexia and age group 5-9 years and 10-15 years ($P= 0.0015, 0.0152$ respectively). **Conclusion:** Awareness regarding specific learning disability among parents, teachers and children are essential for early detection and timely intervention. Children referred with any behavioral and emotional disorders need to be assessed for SLD. Co-morbidity of other psychiatric disorders worsens the prognosis. **KEY WORDS:** Specific learning disability; Clinical profile; Psychiatric co-morbidity; Etiological factors

INTRODUCTION

Specific learning disability (SLD) is a disorder which is highly prevalent among children of the school going age. The incidence of dyslexia has been reported to be 2–18% in primary school children in India, of dysgraphia 14%, and of dyscalculia 5.5%.^[1-3] Learning disorders are not pure syndromes. They are developmental disorders and are multi-dimensional in nature. The etiology of learning disability is

still not clear. Most children with learning disability have a family history of SLD suggesting a genetic vulnerability for this disorder. SLD is associated with several psychiatric morbidities. About 30% of learning disabled children has behavioral and emotional problems such as attention deficit hyperactivity disorder (ADHD), obsessive-compulsive disorder, conduct disorder, conversion disorder, oppositional defiant disorder, other depressive, and anxiety disorders. Co-occurrence of such problems with SLD further adds to the academic difficulty.

Diagnostic tools available to help in early detection of children with this disorder are less. Studies' regarding possible risk factors for this condition is less available. Early detection of developmental differences may be an early signal of a learning disability and problems that are spotted early can be easier to correct. SLD remains a large public health problem because

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of under-recognition and inadequate treatment. Greater effort is required to understand this disorder and its comorbidities, especially in the Indian population.^[4] The literature regarding clinical profile of SLD and its comorbidities in Indian scenario is sparse.

Our study aims at studying the clinical profile of children diagnosed with SLD to give us a better understanding regarding the genetic vulnerability, physical attributes, psychiatric comorbidities, and other factors possibly associated with SLD. This will help us in early detection of this disorder and to provide early intervention to those with detected deficits, to improve their long-term outcome.

MATERIALS AND METHODS

This study was a cross-sectional descriptive study conducted in the Department of Psychiatry, Amala Institute of Medical Sciences, Thrissur. Institutional Ethics Committee approval for the study was obtained from institution and informed consent of all participants was taken from informants before the interview after stating the purpose of the study.

The sample comprised 160 children diagnosed with SLD applying the prevalidated test scores, namely, Binet Kamat test of intelligence and Malin's Intelligence Scale for Indian Children. In children with average IQ, NIMHANS index of SLD was applied to diagnose SLD, wherever indicated. The parents of the children were explained about the study and were interviewed too as part of the study.

Patients fulfilling the inclusion criteria were selected. Sociodemographic and other details of each subject were collected using the study pro forma. Clinical diagnoses of comorbid psychiatric disorders were made based on Mini-International Neuropsychiatric Interview- Kid and clinical examination. Biological factors such as handedness were assessed using Edinburgh handedness inventory and family history of major psychiatric illnesses were assessed systematically using family interview of genetics studies (FIGS).

The data were analyzed using SPSS version 16 and Chi-square test.

RESULTS

Of 160 children, 132 (82.5%) were male and the remaining 28 (17.5%) were female. Majority of the children ($n = 90$) was in the age group 10–15 years, which constituted 56.2% of the total population. 40% of the study population came under the category of 5–9 years. Only 6 children were came under 16–18 years, which constituted 3.8% of study population.

Analysis showed majority of children ($n = 63$) was studying lower primary classes, which constituted 39.4% of study

Table 1: Table showing temperament distribution of the study population

Temperament	Frequency (n) (%)
Easy	89 (55.6)
Slow to warm	31 (19.4)
Difficult	40 (25.0)
Total	160 (100.0)

Table 2: Table showing reason for referral to psychiatric unit population

Reason for referral	Male (n)	Female (n)	Total
Scholastic backwardness	125	27	152
Irritability	88	11	99
ADHD	83	17	100
Others	112	23	135

ADHD: Attention deficit hyperactivity disorder

Table 3: Table showing details of specific learning disability

Gender	Male (n)	Female (n)	Total
Dysgraphia	2	2	4
Dyscalculia	9	2	11
Dyslexia	1	0	1
Dysgraphia and dyscalculia	5	2	7
Dysgraphia and dyslexia	10	3	13
Dyscalculia and dyslexia	2	0	2
Dysgraphia, dyscalculia, and dyslexia	103	19	122

population. 57 children were studying upper primary classes, which contributes 35.6% of study population. 38 children (23.8%) were studying in high school and the remaining two children (1.2) are studying in higher secondary classes. Analysis showed that 82 of studied children were following Kerala syllabus, which constituted 51.2% of study population, the remaining 78 children were studying in CBSE syllabus that contributed to 48.8% of the study population.

Analysis showed four children had dysgraphia alone. 11 children had dyscalculia alone and one child had dyslexia alone. Seven children had combination of dysgraphia and dyscalculia. 13 children had dysgraphia and dyslexia. Two children had combination of dyscalculia and dyslexia. The remaining 122 children had combination of dyslexia, dysgraphia, and dyscalculia Tables 1-3.

Analysis showed 12 children ($n = 12$) had alcohol abuse in the first degree relatives that constituted 7.5% of study population. Five children ($n = 5$) had psychosis in the first degree relatives, which contribute to 3.1% of study population. Four children ($n = 4$) had depression in the first degree relatives, constitutes 2.5% of study population. Two children ($n = 2$) had alcohol abuse in the second degree relatives, contributes

to 1.2% of study population. The remaining seven children had depression in the second degree relative, depression in the third-degree relative, mania in the second degree relative, mania in the third-degree relatives, psychosis in the second degree relative, and psychosis in the third-degree relatives.

DISCUSSION

SLD is a disorder which has far-reaching consequences. In our society, where the academic structure is quite rigid and there is a uniform expectation for every student, a child with undiagnosed SLD is at a significant disadvantage. The levels of academic achievement they can accomplish will become limited. In our state, where literacy is one of the highest in the country, it is imperative that we have a better understanding of this disorder to help our students achieve better.

The mean age of subjects in our study sample was 10.7 (standard deviation \pm 2.805). In our study, we found that the majority of the children with SLD (56.2%) came in the category of 10–15 years, which corroborates with both Indian and western studies.^[5] We observed that 40% of the study sample was in the age 77 group of 5–9 years. This indicates the growing level of awareness among parents and teachers regarding SLD as a disorder which needs evaluation. Analysis of clinical profile shows, SLD is more common in boys (82.5%).

Sex differences in SLD are estimated to be at around 1.5–2.1 in favor of males,^[6,7] which is consistent with our observation. We observed that 25% children with learning disability had difficult temperament and 20% had slow to warm temperament. Earlier studies show children with adverse temperamental disposition and deficits in processing information face greater challenges in acquiring increasingly complex academic and social competence expected with development.^[8] 97.5% of the subjects were right handed. In addition to scholastic backwardness, they were referred with different emotional and behavioral problems to the psychiatrist, most common ones being inattention, hyperactivity, irritability, conduct symptoms, anxiety symptoms, and depression. Analysis of psychiatric comorbidity revealed that ADHD is the most comorbid psychiatric disorder (60%) with SLD. Other comorbid psychiatric disorders were more of externalizing spectrum disorders such as conduct disorder and oppositional defiant disorder (20%) and less of internalizing spectrum disorders such as anxiety disorder (15%) and depression (7%). Our study showed a possible association between significant childhood medical illness such as febrile seizure and recurrent lower respiratory tract infections with SLD in the study population. We failed to find a significant association between family history of major psychiatric disorders and other comorbid psychiatric illness with SLD. This could suggest the involvement of entirely different pathways in the etiology of these disorders. Our study also showed that there is a possible association between left handedness and

dyslexia which has not been studied before. Family history of SLD was not found to be significantly with SLD possibly due to various informant-related limitations.

Limitations of this study are that this is a hospital-based study that is not representative of the general population. Hence, it would be difficult to generalize the findings of our study. We have interviewed only one family member during the data collection process which limits the accuracy of information regarding family history of SLD and substance use history. We could only make observations regarding possible associations as this is not a case–control study. The strengths of the study are that we used the FIGS interview to elicit family history of psychiatric illness which is a very systematic interview and its use by a professional trained in psychiatry limits errors.

CONCLUSION

Awareness regarding SLD among parents, teachers, and children are essential for early detection and timely intervention. Children referred with any behavioral and emotional disorders need to be assessed for SLD. Comorbidity of other psychiatric disorders worsens the prognosis.

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