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Understanding Children with Specific Learning Disability and Comorbid Attention Deficit Hyperactivity Disorder: A Retrospective Analysis of Case Records

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Abstract:

Title- understanding children with specific learning disability and comorbid attention deficit hyperactivity disorder. A retrospective analysis of case records.

Objectives -To study the clinical and psychoeducational profile of children with specific learning disability (SLD) and comorbid attention deficit hyperactivity disorder (ADHD).

Methodology-The study was a retrospective analysis of case records of children, between the ages of 7 and 17 registered from January 2014 to December 2014, in a private clinic in Hyderabad, where psychiatric outpatient services are provided. A total of 38 case records were selected. The clinical and psychoeducational profile of children with SLD and comorbid ADHD was studied. The results obtained were analyzed using SPSS 22.

Results – The results showed that the comorbidity was more common in boys than girls and most children were between the ages of 7 to 9 years and studying in second and third class. Reading disorder was the most common subtype of SLD comorbid with ADHD, whereas both inattentive type and combined type of ADHD were equally associated with SLD in our sample. The most common class teacher observations were that the child was fidgety, inattentive, and poor in spellings and had difficulty in getting along with peers. Delay in development was found in around 24% of the children.

Conclusion- SLD and ADHD individually lead to academic difficulties. The combination results in an additive disadvantage. Due to the high degree of comorbidity between the two disorders, children presenting with one should be evaluated for the other as well and adequately addressed.

Keywords: specific learning disability, attention deficit hyperactivity disorder, psychoeducational profile

1. Introduction

Specific learning disability (SLD) is a group of neuro developmental disorders manifesting as persistent difficulties in learning to read efficiently, write or perform mathematical calculations, despite having normal intelligence with conventional schooling, intact hearing and vision, adequate motivation and socio cultural opportunity.⁽ⁱ⁾ In India 3-10 % of school going children are affected by this disability.⁽ⁱⁱ⁾ They are associated with various co morbid conditions like attention deficit hyperactive disorders (ADHD), conduct disorders and depressive disorders.⁽ⁱⁱⁱ⁾ About 12-24% of children with SLD have comorbid ADHD which is characterized by hyper activity, short attention span and impulsivity. Reading disorder seems to be the most common SLD to be comorbid with ADHD children compared to non-ADHD children and the risk appears to be the same for both boys and girls.^(iv) Reading difficulties appears to be strongly related with the predominantly inattentive type of ADHD.^(v)

Researchers have hypothesized that the association between ADHD and learning disabilities can be explained by shared genetic influences whereas others have opined that the genetic influences are independent.^(vi) Both ADHD and SLD lead to academic difficulties but the combination of SLD and ADHD impairs the academic and social functioning of the child more than having either disorder alone.^(vii) Children with SLD have academic difficulties like failing to achieve school grades at a level that is appropriate for their intelligence. Their academic problems often have an adverse impact on their self-image, peer and family relationships, and social interactions.^(viii) These problems seem to worsen when children suffer from both the SLD and ADHD leading not only to behavioural problems but academic difficulties finally leading to school dropout.

2. Methodology

The study was conducted in a private clinic in Hyderabad, running outpatient mental health services.

In our clinic, all children availing child psychiatry services are seen by a team comprising of a psychologist and psychiatrist. Sociodemographic data is recorded in a semi structured proforma. Diagnosis is arrived at by interview of parents and child (when child is above 12 years of age), direct behavioral observation of child and additional information from school wherever feasible. Information from school focused on the academic difficulties and behavioural problems observed by the class teacher. Appropriate referrals were done to pediatrician when an organic condition was suspected to be a contributory factor during the course of interview and clinical examination. Diagnostic and statistical manual IV (DSM-IV) criteria is used to make a clinical diagnosis. ADHD rating scale IV is used to confirm the diagnosis of ADHD and NIMHANS index of specific learning disability is used for confirming the diagnosis of SLD. A formal testing for intelligence quotient (I.Q) and autism is done when diagnosis of the same is made during clinical interview. The scales used are Malin’s intelligence scale for children, and childhood autism rating scale respectively.

Inclusion criteria- Case records of all children aged 7 to 17, diagnosed with specific learning disorder (SLD) and comorbid Attention deficit hyperactivity disorder (ADHD) and registered in our clinic between January and December 2014 were taken up for the study.

Exclusion criteria- Children diagnosed with autism, children having an IQ below 90 or where the case records were incomplete were all excluded from the study.

Applying the above inclusion and exclusion criteria a total of 38 case records were chosen. The statistical evaluation of the data was done by using the SPSS version 22.

3. Results

A total of 38 case records of children fulfilling the inclusion /exclusion criteria were included in the study. The males were found to be twice as common as females 2.3:1. (Table 1)

	Frequency	Percent
male	26	68.4
female	12	31.6
Total	38	100.0

Table 1: Gender distribution of ADHD with SLD

Majority children were of 9 years +/- 2.5 years age group and were studying in second and third standards (Table 2).

Age	Frequency	Percent
7	8	21.1
8	4	10.5
9	10	26.3
10	1	2.6
11	4	10.5
12	2	5.3
13	4	10.5
14	4	10.5
15	1	2.6
Total	38	100.0

Table 2: Age at presentation

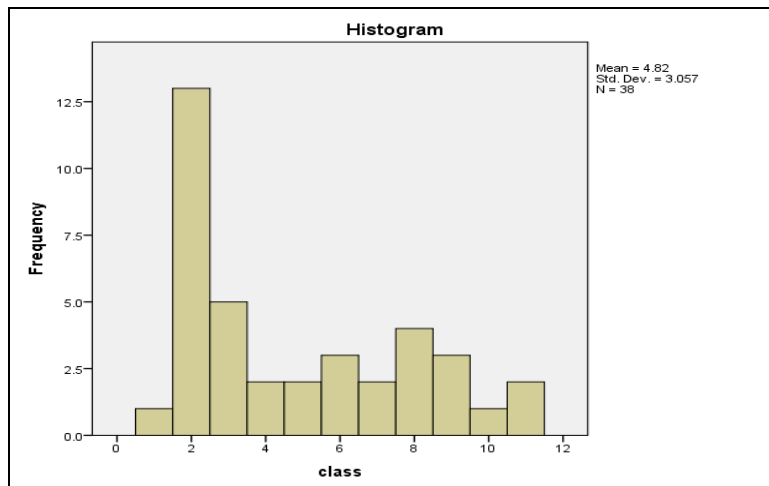


Figure 1

The most common subtype of SLD was found to be reading disorder (47.4%) followed by a combination of all three, reading, writing and mathematics (23.7%) (Table 3). The ADHD subtype was more or less equal between the combined type (47.4%) and the inattentive type (52.6%) (Table 4).

	Frequency	Percent
Reading	18	47.4
Reading and writing	7	18.4
All three	9	23.7

Table 3: SLD subtype

	Frequency	Percent
combined	18	47.4
inattentive	20	52.6
Total	38	100.0

Table 4: ADHD subtype

The common academic difficulties observed by the class teacher were being inattentive (47.4%), fidgety (31.6%), poor in spellings (42.1%) and poor in reading (34.2%). The most common behavioural problem observed was difficulty in peer relations (18.4%) (Table 5). Delay in developmental milestones were found in (23.7%) and perinatal complications mainly preterm delivery and birth asphyxia was observed in (7.9%) (Table 6). No statistically significant difference was found among genders in the above parameters.

Academic	
Slow in writing	3(7.9%)
Difficulty in maths	2(5.3%)
Fidgety	12(31.6%)
Inattentive	18(47.4%)
Poor in reading	13(34.2%)
Poor in spellings	16(42.1%)
Behavioural	
Anxious	2(5.3%)
Difficulty in peer relations	7(18.4%)

Table 5: Class teacher observations

Perinatal complications	3(7.9%)
Delay in development	9(23.7%)

Table 6: Delay/perinatal complications

4. Discussion

The high degree of comorbidity between SLD and ADHD (12-24%) makes the children suffering from this comorbidity a special group whose characteristics both academic and clinical need in depth evaluation. Karande et al did a similar study from India studying children with SLD and comorbid ADHD for their clinical and psychoeducational profile.^(ix) In their study they found boys to be having this comorbidity more than girls as is with our study. We also conclude that it may be due to a referral bias. The average age in our study sample was around 9 years and the class in which they studied was mostly in the second and the third. Our center provides support in terms of evaluation for academic difficulties to a large number of schools across Hyderabad, along with running various awareness workshops for teachers, this could probably account for detection and referral at an early age. As with other studies reading disorder has been found to be the most common SLD comorbid with ADHD. Studies have reported inattentive type of ADHD to be the most common type of ADHD comorbid with SLD, whereas Karande et al have found combined type of ADHD to be the most common.^(ix,x) In our study however we found SLD to be equally comorbid with inattentive and combined subtype of ADHD.

Speech delay was found to be the most common type of delayed developmental milestone and mostly in boys though not statistically significant. Cantwell et al have shown an increased prevalence of both ADHD and SLD in early speech impairment children. SLD was associated with ADHD in this sample.^(xi) Perinatal complications like birth asphyxia, delayed cry and preterm delivery were found in our study. Studies have shown complications like low birth weight and need to place in an incubator and the need for oxygen therapy to be significantly associated with ADHD and SLD than ADHD alone.^(xii) Some studies have however disagreed with the above and found similar rates of ADHD with SLD in term and preterm children.^(xiii) Children in our study presented with a number of academic difficulties like poor in spellings and reading. While this is expected in children with SLD, studies have shown that impairment is more in ADHD comorbid with LD. For instance study on memory have shown difficulties in verbal memory and more so the retrieval process in children having SLD and comorbid ADHD.^(xiv) Studies have also shown that children with ADHD and SLD when compared with children having ADHD alone performed poorly on tasks assessing memory, Visio spatial and verbal abilities thereby contributing

to their academic difficulties.^(xv) Children with SLD with comorbid ADHD showed significantly anti-social behavior than children with either diagnosis alone. Though our study has shown behavioral problems in the form of difficult peer relations, none have amounted to a diagnosis of oppositional defiant or conduct disorder.^(xvi) Adolescents with ADHD have complained of tiredness and excessive need to sleep, frequent quarrelling with close friends, feeling different from other classmates and low self-esteem. The thing that irritated them the most was being lied to and being coerced.^(xvii) Though no attempt was made in our study to understand the behavioural and academic difficulties from the child's perspective, this could be one of the explanations for the behavioural problems observed in these children.

5. Conclusion

Comorbid ADHD and SLD present with a number of academic and behavioural difficulties. It is a chronic lifelong condition and will persist into adulthood. Apart from the difficulties it creates in childhood it can lead to various psychiatric comorbidities in adulthood. For instance untreated ADHD with SLD in adults leads to more depressive cognitions especially in females.^(xviii) Our study has its limitations. It is a clinic based sample, the sample size is small and is retrospective in nature. However the results are more or less similar to other studies done in children. The strengths of the study are that it focuses on the much needed and often neglected area of SLD and ADHD comorbidity and adds to the existing literature.

6. References

- i. Karande S, Sholapurwala R, Kulkarni M (2011). Managing Specific Learning Disability in Schools in India. *Indian Pediatrics*; 48: 5
- ii. Priti A, Chavan BS, Bhargava R, Sharma A, and Kaur J (2013). Prevalence of specific developmental disorder of scholastic skill in school students in Chandigarh, India. *Indian J Med Res*; 138(1): 89–98
- iii. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 4th edition. Washington (DC): APA Press
- iv. Germano E and Gagliano A (2010). Comorbidity of ADHD and Dyslexia. *Developmental neuropsychol*; 35(5), 475–493
- v. Yoshimasu K, Barbaresi WJ, Colligan RC, Killian JM, Voigt RG, Weaver AL, Katusic SK (2010). Gender, ADHD, and Reading Disability in a Population-Based Birth Cohort. *Pediatrics*; 126(4): e788–e795.
- vi. Hart SA, Petrill SA, Willcutt E, Thompson L A, Schatschneider C, Deckard K D, Laurie E (2010). Cutting Exploring How Symptoms of Attention-Deficit/Hyperactivity Disorder Are Related to Reading and Mathematics Performance: General Genes, General Environments. *Psychol Sci*. 2010 November; 21(11): 1708–1715.
- vii. Willcutt EG, Pennington BF (2000). Psychiatric Comorbidity in Children and adolescents with Reading Disability. *J. Child Psychol. Psychiat.* Vol. 41, No. 8, pp. 1039–1048
- viii. Karande S and Venkataraman R (2013). Impact of co-morbid attention-deficit/hyperactivity disorder on self-perceived health-related quality-of-life of children with specific learning disability. *Indian J Psychiatry*; 55(1): 52–58
- ix. Karande S, Satam N, Kulkarni M, Sholapurwala K, Chitre A, Shah N (2007). Clinical and psychoeducational profile of children with specific learning disability and co-occurring attention deficit hyperactivity disorder. *Indian j med sci*, vol. 61, no. 12, December
- x. Talero-Gutierrez C, Van Meerbeke AV, Reyes RG (2012). A clinical study of ADHD symptoms with relation to symptoms of learning disorders in school children in Bogota, Columbia. *J Atten Disord*; 16(2):157-63
- xi. Cantwell DP, Baker L (1991). Association between attention deficit-hyperactivity disorder and learning disorders. *J Learn Disabil*; 24:88-95.
- xii. Bhat M, et al (2005). Obstetric complications in children with attention deficit /hyperactivity disorder and learning disability. *MJM* 8(2):109-13.
- xiii. Harris MN, Voigt Rg, Barbaresi WJ, Voge GA, Killian Jm, Weaver AL, Colby CE, Carey WA, Katusic SK (2013). ADHD and learning disabilities in former late preterm infants: a population based birth cohort. *Pediatrics*; 132(3):e630-6
- xiv. Vakile, Blachstein H, Wertman – Ela R, Greenstein Y (2012). Verbal learning and memory as measured by the Rey-Auditory verbal learning test: ADHD with and without learning disabilities. *Child Neuropsychol*; 18(5):449-66
- xv. Jakobson A, Kikas E (2007). Cognitive functioning in children with and without attention deficit/hyperactivity disorder with and without comorbid learning disabilities. *J Learn Disabil*; 40(3):194-202
- xvi. Piseco S, Baker DB, Silva PA, Brooke M (1996). Behavioral distinctions in children with reading disabilities and/or ADHD. *J Am Acad Child Adolesc Psychiatry*; 35:1477-84.
- xvii. Brook U, Boaz M (2005). Attention deficit hyperactivity disorder and learning disabilities: adolescents perspective. *Patient Educ couns.*; 58(2):187-91
- xviii. McGillivray JA, Baker K (2009). Effects of comorbid ADHD with learning disabilities on anxiety, depression, and aggression in adults. *J Atten Disorder.*; 12(6):525-31