Psychological Co-morbidity in Children with Specific Learning Disorders

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ABSTRACT

Children under 19 years of age constitute over 40% of India’s population and information about their mental health needs is a national imperative. Children with specific learning disorders (SLDs) exhibit academic difficulties disproportionate to their intellectual capacities. Prevalence of SLD ranges from 2% to 10%. Dyslexia (developmental reading disorder) is the most common type, affecting 80% of all SLD. About 30% of learning disabled children have behavioral and emotional problems, which range from attention deficit hyperactivity disorder (most common) to depression, anxiety, suicide etc., to substance abuse (least common). Co-occurrence of such problems with SLD further adds to the academic difficulty. In such instances, diagnosis is difficult and tricky; improvement in academics demands comprehensive holistic treatment approach. SLD remains a large public health problem because of under-recognition, inadequate treatment and therefore merits greater effort to understand the co-morbidities, especially in the Indian population. As the literature is scarce regarding co-morbid conditions in learning disability in Indian scenario, the present study has tried to focus on Indian population. The educational concessions (recent most) given to such children by Central Board of Secondary Education, New Delhi are referred to. The issues to be addressed by the family physicians are: Low level of awareness among families and teachers, improper dissemination of accurate information about psychological problems, available help seeking avenues, need to develop service delivery models in rural and urban areas and focus on the integration of mental health and primary care keeping such co-morbidity in mind.

Keywords: India, learning difficulty, learning disorders, psychological co-morbidity, specific learning disorder

Introduction

The current conceptualization of learning disorders (LDs), former ly referred to as academic skills disorders,[1,2] follows the traditional approach of classifying learning by specific academic skills. These skills include reading, mathematics and written expression. In each case, the skills are measured by standardized tests whose scores must fall substantially below the level expected with respect to age, intelligence and age-appropriate education. These deficits interfere with academic skills, leading to low grades or failures. Other associated features are low self-esteem, demoralization, social skills deficits, dropping out of school and difficulties in employment and social adjustment.[3]

Schools play a crucial and formative role in the spheres of cognitive, language, emotional, social and moral development of a child.[4] Academic skills such as reading, writing and mathematics form the foundations upon which a student’s performance at school is assessed. A learning problem may, therefore, create feelings of anxiety, inadequacy and shame, leading to behavioral disturbances in children of school age.[5] Any negative feedback from school is likely to have an impact on the emotional, social and family functioning of a child.

Children with learning disorders (LD) are those who exhibit academic difficulties out of proportion to their intellectual capacities. They have impaired ability in learning the academic skills of reading, writing, arithmetic or spelling. As per the Diagnostic and Statistical Manual of Mental Disorders – IV (DSM-IV)[1,2] learning disorders are of four types: Reading disorder (RD), mathematics disorder, disorder of written expression and Learning disorder not otherwise specified. Estimates of the prevalence of learning disorders range from 2% to 10% depending on the nature of ascertainment and the definitions applied across various countries.[1,2]

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Psychological Co-morbidity

Learning disabilities are frequently associated with psychological problems. Results of the population-based surveys suggest that about 30% of learning disabled children have behavioral and emotional problems. Psychopathology worsens with age in children with nonverbal learning disabilities. Marked anxiety can appear when children with dyscalculia are confronted with reasonably simple arithmetic problems. A study by Ekbład found a positive correlation between psychological disturbance and poor school achievement among Chinese children. Shenoy and Kapur noted that 21 out of 88 children with learning disability had a co-morbid psychological diagnosis. Kishore et al. reported that 21 out of 56 children with specific developmental disorders of scholastic skills had a co-morbid psychological disorder.

John found that one-third of scholastically backward children had a co-morbid psychological problem. Of these, 16% had disorder of emotion, 6% had conduct disorder (CD) and 12% had mixed disorders of emotion and conduct. In a retrospective study at child and adolescent unit at National Institute of Mental Health and Neurosciences, Bengaluru; Muthukumar et al. found that 79% of children with learning disabilities had comorbid psychological disorders, in which 32% had internalizing disorders, 28% had externalizing disorders and 19% had other disorders. In a study by Bäcker and Neuhäusler on 77 children with dyslexia, psychological co-morbidity was found in 66.2%. Of these, the most frequent was adjustment disorders, followed by hyperkinetic disorders and anxiety. Willeutt and Pennington from the University of Colorado reported that children and adolescents with reading disability exhibited significantly higher rates of all internalizing and externalizing disorders than individuals without reading disabilities.

Externalizing Disorders

Attention deficit hyperactivity disorder, oppositional defiant disorder and conduct disorder

One of the most common co-morbid conditions in childhood is that of reading disabilities and attention deficit hyperactivity disorder (ADHD). Children with specific learning disabilities (SpLDs) show an increased risk of hyperactivity. There is a strong relationship between inattentiveness and reading disabilities. Reported rates of co-morbid ADHD in learning disabled children vary from about 10% to as high as 60% depending on the specific sample examined. The subgroup of children with ADHD plus LD deserves special clinical and educational attention. Owing to the high degree of overlap between reading disabilities and ADHD, detecting the existence of ADHD in the reading disabled child is important in order to gauge better the intervention required. Learning disabilities are accompanied by personality characteristics that predispose the individual to CD.

McGee et al. in a study in New Zealand, found that reading disabled boys were about 3 times as likely as their peers to have an externalizing disorder, particularly ADHD, CD or oppositional defiant disorder (ODD). The presence of one or more type of LD was more common in the 86 children with ADHD (69.8%) than in the 33 children without ADHD (39.4%), this was primarily because of the disproportionate number of children with LD in written expression (ADHD, 65.1%; without ADHD, 27.3%); and spelling (ADHD, 30.2%; without ADHD, 6.1%). Although learning disabilities in math (numerical operations) and reading (basic reading or reading comprehension) were more prevalent in children with ADHD than in children without ADHD, the differences in frequencies were not significant.

In samples of children with ADHD, estimates of the prevalence of LD ranged from 15% to 50% for reading, 24% to 60% for math, 24% to 60% for spelling. Overall, 25% to 50% of children with ADHD have LD.

The prevalence of RD is significantly higher than would be expected by chance in samples of individuals with ADHD, with the rate of comorbidity typically falling between 25% and 40%.[26] RD is nearly equally frequent in boys and girls in community samples (boy/girl ratio of 1.2–1.5/1), in clinic samples approximately 4 times more boys than girls meet criteria for RD. More boys than girls meet criteria for ADHD in both community and clinical samples, but the boy/girl ratio is again substantially higher in clinic samples (9/1) than in school-based or community samples.[30] These gender differences in the overall prevalence of RD and ADHD suggest that the relation between the two disorders might also be different in boys and girls.

Internalizing Disorders

Depression

Kashani et al. studied the co-occurrence of major depressive disorder (MDD) and learning disabilities in 100 children aged 9–12 years, 62% of children with MDD had learning disability (LD), whereas only 22% of nondepressed children had LD. The authors felt that this three-fold increase in LD observed among MDD children implied either a causal relationship between LD and MDD or a predisposition for some children to manifest both conditions. Livingston reviewed the literature on co-morbid depression and learning disability and hypothesized three potential relationships: Depression causes or exacerbates learning problems. Learning disabilities cause or exacerbate depression. A specific brain dysfunction can lead to both MDD and LD in some children. Livingston suggested that determining rates of LD in MDD children would be important in clarifying the nature of the relationship between these disorders. The link between suicide and learning disabilities has been suggested by Peek.

Fristad et al. of Ohio State University, determined the occurrence of learning disability in 30 inpatient children aged 6–12 years with MDD and found that learning disabilities occurred 7 times more often compared with community based rates (33% vs. 4.7%).

Huntington and Bender reviewed the literature from 1984 to 1993 on emotional well-being in adolescents with learning
disabilities. It was concluded that adolescents with learning disabilities have a less positive academic self-concept, experience higher levels of trait anxiety and have a higher prevalence of somatic complaints. Adolescents with learning disabilities had high rates of depression and alarming rates of suicide.

In a study by Srinath et al.[3] The specific learning disorder (SLD) battery identified 149 (9.4%) children as having scholastic problems (rural: 11.7%; slum: 9.0%; urban: 6.6%). Of these children, 114 (7.2%) did not have any other Axis I disorder but did poorly only on the SLD Battery. These children could not be diagnosed as having SLD, as per International Classification of Diseases Tenth Revision-Diagnostic Criteria for Research criteria as most of them lacked adequate schooling.

**Suicide and Learning Disability**

Adolescents with significant reading problems are at higher risk for behavioral and emotional difficulties than adolescents with typical reading ability.[9] Moreover, youth with learning disabilities (LD) have been suggested to be at increased risk for suicidal behaviors.[16,39]

According to Wagner et al.,[4] degree to which reading problems trigger a cycle of negative self-evaluation and emotion, eventually leading to efforts to escape aversive situations and self-awareness, the adolescents with single word reading problems have higher rates of school dropout and suicidality.

Baumeister[43] proposed that some instances of suicide were thought to represent an effort to “escape from the self” following situations that led to perceptions of limitations. It is possible that the stresses associated with reading difficulties add to or interact with other risk factors or stresses in the adolescent’s lives to significantly increase the likelihood of outcomes such as suicidality and school dropout.[38]

**Behavioral and Emotional Problems of Students with Learning Disabilities**

Martínez and Semrud-Clikeman[42] found that students with LD expressed more loneliness, more victimization, and less social satisfaction (i.e. school integration) than their non-LD matched peers. Clinical observations of students with LD also show that this population tends to suffer chronic low levels of depression and anxiety and are more depressed than peers who do not have LD, thus more susceptible to emotional and social problems than children without LD. According to an Indian study by Karande et al.[31] behavioral problems were diagnosed in 20 (40%) children. Aggressive behavior even after minimal stressors was noted in 15 (30%) children. Withdrawn behavior was noted in another 5 (10%) children. None of the children’s symptoms/behaviors met the DSM-IV threshold for diagnosing anxiety disorder, depression, ODD or CD.

Whitney and Smith[45] posits that the academic failure leads to impairments in psychosocial functioning. That is, for children with LD, depression is an expected cognitive and emotional response to chronic academic failure. In line with the academic difficulties hypothesis, the students with multiple learning disabilities, especially in the core academic areas (reading and math), have to exert greater efforts to compensate academically and emotionally for their learning deficits compared to students with a single learning disability and peers without LD. As a result of experiencing academic problems in multiple academic areas (e.g., mathematics and reading), psychosocial stressors would be more apparent in students with multiple LD compared to students with LD in a single academic area and students with no LD.

Based on the research till date and on the characteristics common to children with LD and children who are bullied, there is reason to believe that children with LD are at greater risk of peer victimization. In contrast, there are no consistent findings to indicate that children with LD are significantly more likely to bully others.[44]

A meta-analysis of studies investigating the social skills of children with LD indicated that about 75% of students with LD “would receive a more negative assessment of social skills and at a level that would distinguish them clearly from non-LD comparison group.”[45]

**Learning Disability and Substance Abuse**

One mediator of risk for these children may exist in the domain of cognitive deficits related to learning and academic performance. Poor academic performance is a known predictor of later substance use and abuse, and delinquent adolescents are consistently found to have IQ deficits.[46] If any conclusions that are drawn about prediction to substance use from LD, have been in a positive light, as children without LD are more likely to try cigarettes at an early age. Research groups have reported positive associations between cognitive performance variables and substance use. Higher reading readiness and IQ predicted earlier and more frequent use of alcohol in adolescence, and also reported that higher IQ predicted higher lifetime cocaine use in young adults’ ages 19–26 years in a national probability sample. At least for adolescence, taken together, these findings might suggest a pathway for at-risk children whereby greater intellectual capacity and performance lead to more rapid experimentation with “grown-up” behaviors such as cigarette smoking and alcohol use.[48]

**Anxiety disorders**

Prior et al.,[47] found that in children with arithmetic difficulties, phobic disorder or anxiety was the most common co-morbidity (30%). Of the children with both spelling and arithmetic difficulties, 24% had phobic disorder or anxiety. Cantwell and Baker[48] noted that children with learning disabilities had increased rates of mood disorders.

Students with LD have basic psychological and/or neuropsychological deficits that impede their ability to perform well in basic academic areas.[48] These problems increase the likelihood that classroom tests will be regarded as a substantial threat, thus increasing test anxiety. In fact, studies have shown
that students with LD experience more difficulties in evaluative situations than students without LD.[9] Gender differences in test anxiety have been reported in the literature, with female respondents scoring higher than male respondents on self-report measures of test.[3] Numerous explanations have been offered to account for the gender differences in anxiety, in LD including differences in socialization patterns,[31] differences in coping styles, and differences in willingness to admit to anxiety.[32]

Besides gender and LD, age was a significant predictor of test anxiety. Older age predicted higher cognitive obstruction/inattention scores and lower physiological hyperarousal scores. Age differences in test anxiety have been noted in the literature,[33] but the age differences reported have been at the total test anxiety level. Perhaps, test anxiety symptoms vary somewhat as a function of age, with physical symptoms more common during childhood and cognitive symptoms - more specifically, cognitive obstruction and inattention symptoms - more common during adolescence and adulthood.[34]

Implications

At present, only the national Educational Boards which conduct the Indian Certificate of Secondary Education and the Central Board of Secondary Education (CBSE) examinations, and the state government of Maharashtra have formally granted children with SpLD the benefit of availing the necessary provisions from standard I to XII. However, these provisions are not yet available to many children with SpLD in our country bar few larger cities and schools; and especially to those who are studying in vernacular medium schools.[35] The latest circular of 2008 of CBSE Board, New Delhi in respect of the educational concession to such children can be referred in.[36]

Conclusion

There is a high risk of psychological co-morbidity in learning disabled children. The comorbidity of developmental dyslexia with both internalizing and externalizing disorders as well as with other learning disabilities underscores the need for cognitive and behavioral approaches in the remediation programs offered to dyslexic children. Early diagnosis and intervention in children with learning disorders makes a substantial improvement in self-confidence and social competency, which helps them in opening windows of opportunity in school and in the world of work.

The review summaries there are definite implications for clinical training, practice and policy initiatives. The issues to be addressed are: Low level of awareness among families and teachers, improper dissemination of accurate information about psychological problems, available help seeking avenues, need to develop service delivery models in rural and urban areas and focus on the integration of mental health into general health care keeping such co-morbidity in mind. Manpower and training issues for pharmacological and psychosocial interventions should be of paramount in the planning effective services for SLD. Effective networking between mental health professionals, pediatricians, community-based health services and professionals from the education sector would be essential, too.

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