



BMH Medical Journal 2015;2(3):74-78 **Brief Review**

Specific Developmental Disorders of Scholastic Skills

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Abstract

Several factors contribute to scholastic backwardness in children. Causes include specific developmental disorders of scholastic skills, low intelligence, chronic illnesses, family dysfunction, social problems, attention deficits, and emotional disorders. Children with specific developmental disorders of scholastic skills experience significant impairment in the acquisition of reading, writing and mathematical skills. If not remedied at the earliest, these children are at risk of developing severe stress related disorders. There is high comorbidity of behaviour disorders and emotional disorders in these children. Hence early intensive remedial education is essential in the management of children with specific developmental disorders of scholastic skills.

Key Words: Scholastic backwardness, specific developmental disorders of scholastic skills, remedial education

Introduction

There are several causes for scholastic backwardness, which include specific developmental disorders of scholastic skills (SDDSS), below average intelligence, attention deficit hyperactivity disorder, chronic illnesses, emotional disorders as well as problems in school and home environment [1, 2, 3].

Children with poor scholastic performance become source of immense stress for parents and teachers, which in turn, reduce the self-confidence of children. These children are at risk of developing stress related disorders and behaviour disorders. The misery of children with scholastic backwardness should be alleviated. Among the children with poor scholastic performance, we should focus our attention primarily on children with specific developmental disorders of scholastic skills because, remediation works the best in these children. They can be successfully managed and we can guide them to become professionals in the areas of their strengths. Children with SDDSS have disturbances in acquisition of scholastic skills from early stages of development. These disturbances are not due to lack of opportunity to learn. They are not mentally retarded and they do not have acquired brain disease or trauma [1]. These children have significant impairment in areas related to reading, writing and arithmetical skills. The subtypes of SDDSS frequently co-occur with one another [4].

Subtypes of Specific Developmental Disorders of Scholastic Skills

Specific Reading Disorder

Children with specific reading disorder have significant impairment in the development of reading skills [5]. The reading performance will be significantly below the level expected on the basis of age, general intelligence and school placement. They experience significant impairment in the acquisition of reading accuracy, reading fluency and reading comprehension which cannot be accounted for by low IQ, visual acuity problems, neurological damage or poor educational opportunities [6].

Specific Spelling Disorder

There is specific and significant impairment in the development of spelling skills. The spelling skills of the child will be significantly below the expected level related to age, general intelligence and school placement. Ability to spell orally and to write the words correctly, will be impaired. This will also be associated with grammatical errors, punctuation errors, poor paragraph organization and poor handwriting.

Specific Disorder of Arithmetical skills

The arithmetical skills of the child will be significantly below the expected level based on age, general intelligence and school placement. The arithmetical difficulties include failure to understand the basic concepts of maths, inability to understand mathematical terms or signs and difficulty in learning mathematical tables. Children with mathematics difficulties have deficits associated with fact retrieval. They also have defects in problem conceptualization and calculation [7]. These children have problems with identification of numbers, counting and retrieval of arithmetic combinations [8]. Children with mathematical difficulties also have deficits in place value concepts and number sense [9]. The mathematical and cognitive performances of students with mathematics learning disabilities are significantly lower compared to age or grade-matched students with no learning disabilities [10].

Mixed Disorder of Scholastic Skills

In this category, arithmetical and reading or spelling skills are significantly impaired.

There is high comorbidity between reading disability and mathematics disability. The neuropsychological assessment indicates that in both these conditions, there are defects in working memory, processing speed and verbal comprehension. In children with specific reading disorder, there are deficits in phoneme awareness and naming speed. Specific disorder of arithmetical skills is associated with defects in set shifting [11].

Associated Problems

Many children with SDDSS develop somatoform disorders. They present to clinicians with medically unexplained symptoms. Management of the patients with medically unexplained symptoms become a difficult problem for clinicians [12]. Their symptoms will subside only after managing the underlying stress. Academic pressures and learning difficulties lead to pain disorder and conversion disorders [13]. Stress related disorders are common during examination period in children with SDDSS. Children with high stress level during the period of examinations develop associated musculoskeletal symptoms [14].

There is significant overlap between SDDSS and attention deficit hyperactivity disorder. Attention-deficit hyperactivity disorder has high comorbidity with SDDSS during childhood and the reported

rates of comorbidity varies from 10% to as high as 60% depending on the sample. These comorbid problems will cause significant negative impact in scholastic performance [15]. Children with reading disorders usually have comorbid behaviour disorders and anxiety disorders. Hence early interventions for children and adolescents with reading disabilities are of profound importance [16].

Treatment

Intensive individualized one to one remedial training is the treatment of choice for learning disorders. The emotional and academic problems of children with specific reading disorders are significantly high and hence evidence-based interventions are essential [17]. One to one reading interventions for elementary students at risk for reading disabilities are found to be highly effective [18].

A very important review of the research literature conducted by the National Reading Panel in the year 2000, gives results about the effectiveness of different types of interventions in management of reading disorders. The review shows that the most effective training for improving reading and spelling skills is systematic instructions to learn letter sound relations and blending sounds to form words [19]. By applying these skills in reading and writing activities, we can definitely improve the literacy skills of children. In children with reading disorders, there is significant improvement in reading ability after about 70 hours of remedial education. The comprehension skill, phonetic skill and word identification improve with remedial training [20]. Though severe reading disorders are a major concern, even mild deficits in reading skills, will cause difficulty in learning. Hence even the minor deficits should be identified early and intervention should be provided [4]. The therapy for reading disorders should include training for improving speed and accuracy of reading sentences and passages along with isolated words [21].

Interventions can be started at preschool age to help children who are at-risk for developing SDDSS. Scientific intervention programs significantly improves the mathematics proficiency of at risk first graders with limited number knowledge [22]. After Grade one, comprehension interventions are associated with better effect for children with specific reading disorder. Hence developmental understanding of reading remediation is very important [23]. Improvement in reading, spelling and comprehension skills occur when the intensity and duration of instructions is increased [24].

Specific remedial training for children with mathematical disabilities will reduce the exam related anxiety, school phobia and academic stress [25]. Remedial intervention improves the subtraction and addition skills of children with specific disorder of arithmetical skills [26]. Virtual manipulative instruction is an effective technology to teach advanced mathematical concepts to students with specific disorder of arithmetical skills [27].

It is essential to find the reason for a child's scholastic backwardness and start remedial education at the earliest so that the child can perform up to full potential in future [28].

Conclusion

There is an urgent need to improve awareness among teachers and parents that, all children with scholastic backwardness need early evaluation and scientific interventions. The emotional and academic consequences of specific developmental disorders of scholastic skills will have significant negative impact in adolescence and adult life. Several studies have proved that reading, spelling and arithmetical difficulties can be ameliorated with remedial training. Hence we should start the interventions at the onset of learning difficulty. Thus we can remedy the learning problems and guide the children towards a successful future life.

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