Learning Disabilities in Childhood*

SOME GUIDELINES AND CAUTIONS

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SUMMARY

World-wide attention is being focused on the recognition, diagnosis and treatment of learning disabilities. Detailed reports dealing with this subject have been published in many countries.

Parents are in urgent need of guidance to help them evaluate conflicting views; they are often the victims of interprofessional rivalries.

There is a tendency to over-fractionate in both diagnostic tests and treatment programmes. Effective diagnosis must be based on comprehensive history-taking and adequate multidisciplinary investigation. Findings must be evaluated by the leader of the multidisciplinary team before treatment programmes are recommended.

The importance of genetic aspects must not be overlooked. There appears to be a continuum of degrees of natural aptitude, which is much less causally related to intelligence and environmental factors than is often assumed.

The role of optometry and its often limited and restricting approach, at the expense of constructive teaching of literacy, is discussed.

Drug therapy plays an important part in the treatment of carefully selected cases of learning disabilities. Follow-up studies have shown no cause for alarm concerning possible later drug addiction.

The emphasis must be on treating the whole child, viewed as an individual, and the therapist must be child-orientated and not programme-orientated.


In addition to a vast number of scientific articles in medical, neurological, psychiatric, psychological and educational journals, official reports have been published in various countries outlining the magnitude of the learning disability phenomenon.

The report¹ One Million Children sets out the findings of the Commission on Emotional and Learning Disorders in children in Canada.

The Murray Report,² Children with Minimal Cerebral Dysfunction, discusses this problem and its implications in South Africa.

A committee of the National Society for Crippled Children and Adults and the Neurological Sensory Diseases Services Program of the United States Public Health Service³ published phase 1 of a three-part programme in the study of children with minimal brain dysfunction.

In England, a report⁴ was recently made to Parliament on 'Children with specific reading difficulties'. The Learning Disabilities Act of 1969 (US Senate, Washington, DC) brought attention to the fact that only 2,1 million of approximately 6 million handicapped children were receiving the educational services they needed.

DEFINITIONS

Dyslexia, minimal cerebral dysfunction, perceptual difficulties and other labels, all refer to symptoms or clusters of symptoms found in children with learning disabilities. For practical purposes the term 'learning disabilities' will be used, as this includes all the symptoms and signs encountered. The spectrum of difficulties which may be encountered is broad. They may affect not only educational attainment but learned social behaviour and emotional controls.

DIAGNOSTIC ASSESSMENT

Task Force I in the USA is represented by a multidisciplinary team charged with defining terminology and identification. Clements⁵ speaks of 'children of near average, average, or above average intelligence with certain learning or behavioural difficulties, ranging from mild to severe, which are associated with deviations of function of the central nervous system. These deviations may manifest themselves by various combinations of impairment in perception, conceptualisation, language, memory, and control of attention, impulses, or motor function.'⁶

A complete diagnostic assessment must include a full history of the child's development from the time of conception, a comprehensive family history, a social history, physical and neurological examinations, psychometric testing, speech and language assessment and special investigations of vision, hearing and EEG records when indicated.

To meet the challenge of dealing with the treatment of learning disabilities, professionals from diverse fields and professionals from the same field but with differing philosophies, have begun to work together. Many diagnostic tests and remedial techniques have been developed but communication problems and professional rivalries have
also arisen. Various professionals attribute cause and recommend subsequent treatment to one area, to the exclusion of others, resulting in fractional approaches. Professional contributions to diagnosis must be co-ordinated and evaluated by the leader of the team so that a total treatment programme can be planned. The leader best equipped to evaluate neurological background, in terms of training, is most often a medical practitioner.

Are We Fractionating Too Much?

Mann states that fractionating of abilities in both evaluation and training has become a major feature in the remediation of learning disabilities. He suggests, too, that fractionation suggests a precision in measurement that we cannot yet produce. He concludes that claims for the validity of the procedures used for testing on which treatment programmes are based, must be viewed with caution. Practical experience confirms Mann's view that the goals of the fractionators can probably be realized through traditional curricular approaches. An example would be training perception through handwriting, reading and art rather than through the 'figure-ground' section of the Frostig programme. Similar analogies could be made in the case of the perceptual motor programmes of Purdue and Delacato and the ITPA language programmes.

Neurological Examination

Klatskin et al. found that in 43 out of the 50 children they studied, there was agreement between the psychological and neurological examinations in children suspected of having minimal cerebral dysfunction. The two examinations thus provide an independent estimate of such dysfunction. They also found that these children with minor neurological signs showed disturbances in central processing brain function which made it difficult for them to integrate what they perceived. They therefore failed to give adequate response to psychological and neurological tests.

Paediatric neurologists have become interested in the psychoneurological basis of educational problems.

Bradley suggested a relationship between cerebral anoxia or trauma and later behaviour and learning difficulty. From this concept developed the recognition of a spectrum of cerebral dysfunction with a number of syndromes. The paediatric neurologist can provide invaluable help to the educators in the treatment of these children by assessing neurological function and EEG findings and prescribing medication when indicated.

Silberberg et al. state that although the actual or presumed anatomical or neurophysiological lesion may be slight, the social, educational and emotional consequences are usually considerable, and may be profound.

Electro-encephalogram

Tymchuk et al. conclude that an abnormality in the EEG of a child with learning problems is not necessarily associated with the learning difficulties. The EEG data should be combined with neurological findings to provide some indication of possible organicity. It is the child who must be treated, not the EEG.

Optometry

Ophthalmologists recommend less emphasis on the eyes in learning disorders. Benton warns against adopting certain procedures not based on enough objective scientific evidence. He has found that apart from the Hawthorne effect causing improvement by any change in environmental handling, there is little or no correlation between the eye problem and reading ability.

Goldberg and Arnott state that learning is done in the brain and not in the eyes, and that while the electroystamograph does demonstrate incoordinated eye movements in children who have difficulty in reading, it is the degree of comprehension that produces the type of ocular movement and not ocular motility that determines the degree of comprehension.

Krippner comments that if professionals cannot agree upon the role of visual training in reading disability, one can sympathize with the confusion and conflict experienced by many parents. He recommends that the semantics involved should be clarified, that there should be better communication between the professionals involved in the care of the child and that efforts should be made to improve upon the paucity of basic research on the validity of visual training.

The general public assumes that any 'visual' problem can be corrected by glasses—this is a simpler concept than perception and integration dependent on cerebral function. The leader of the diagnostic and therapeutic team must weigh all the findings realistically and ensure that the child's remedial programme is educationally orientated and not pushed aside in favour of visual training per se.

Goldberg stated that no known scientific evidence supports claims for improving the academic abilities of learning disabled or dyslexic children based solely on visual training or neurological organizational training—furthermore such training has frequently resulted in unwarranted expense and has delayed proper instruction for the child.

Certain children certainly require, and benefit from, visual perceptual and visual motor training but this aspect must be kept in perspective so that the basic scholastic skills also receive the necessary attention.

GENETICS

Silver studied 556 children with learning disabilities and found that even though there was a history of prenatal, perinatal, or postnatal difficulties, siblings without such a history also had learning disabilities. His study strongly suggested that the aetiological factor in some of the children with this syndrome is an inherited central nervous
system dysfunction, rather than brain damage. The brain is a complex organ and many types of minimal dysfunction occur. The child with the neurological learning disability syndrome has a specific cluster of dysfunction. These symptoms may be due to subtle perinatal brain damage, prenatal metabolic disturbance or postnatal brain trauma. There is also a strong possibility that a dysfunctioning brain system may have been inherited. A strong familial pattern does exist in 30% - 40% of cases in Silver's study. As research sophistication permits further neurophysiological study it is possible that genetically determined dysfunction, rather than tissue damage, will be found to be the aetiological factor in the neurological learning disability syndrome.

Rossi maintains that a child inherits the nexus of his personality structure and biochemical idiosyncrasies. Early experience may modulate this potentiality but only to a minor degree. A careful analysis of parents' abilities and disabilities can help to predict areas of educational handicap. Steroid insufficiency and subsequent impairment of protein synthesis at the level of DNA transcription may be involved. Chemotherapy may ultimately play an important role in the treatment of learning disabilities. Symptoms of learning disability are frequently found in several siblings and in one or other parent, as well as grandparents, uncles, aunts and cousins. Learning disabilities are far more common in boys than in girls, again suggesting that heredity is an important factor.

MEDICATION

The indiscriminate use of medication, whether psycho-stimulants or tranquilizers, cannot be advocated. There is, however, a considerable amount of evidence to show that in carefully selected cases, psychostimulants may achieve a great deal in modifying hyperkinetic behaviour and improving concentration and work productivity in certain learning-disabled children.

Psychostimulant drugs have been in use for the past 30 years in the treatment of children with behaviour disorders, hyperactivity and learning problems.

Hyperkinetic impulse disorder is a symptom of chronic, sustained, severe hyperactivity, marked distractibility, short attention span, irritability and hyperexcitability. There are often severe behavioural manifestations such as emotional lability, low frustration tolerance and learning difficulties.

Methylphenidate (Ritalin) is the most effective drug for the hyperkinetic child and tranquilizers are usually more effective for the fidgety or anxious child.

Fish writes about the 'one child, one drug' myth, stating that a stimulant is the drug of choice for every hyperactive child. There is no one hyperactive child and a stimulant is the drug of choice for only some hyperactive children. The quality and the consistency of the hyperactivity are important.

Usually the excessive activity and attentional disturbance are less apparent after puberty. Because the ages of 5 to 12 years are crucial to the child's development and self-image, treatment which permits the child to be more accessible to environmental resources is warranted and helpful.

The report of the Washington Conference on the use of stimulant drugs in the treatment of behaviourally disturbed young school children, discusses several aspects of this therapeutic measure. It concludes that there is at present no evidence to justify alarm about future possible drug abuse by the child.

Oettinger states that in his practice where 900 - 1000 children are on medication at one time, drug abuse has been a minimal problem. Over a 3-year period there were only 5 or 6 cases of known misuse of drugs in the patients under control, and these were with drugs other than those prescribed for treatment.

A full investigation and global diagnosis must first be made, viewing each child as an individual with specific problems. Total treatment is required. Drugs will not teach a child to read and they will not modify behaviour unless a model is available for example, and training in social adjustment is instituted. Drugs are not a panacea and not all children will benefit from taking them, but they are useful, safe and valuable in partially treating learning and behaviour disorders.

CONCLUSIONS

It is essential to treat the whole child, after making a detailed diagnosis based on a thorough investigation. Treating the whole child may involve medical care, parent-counselling, school placement, remedial education, play therapy, recreational programme and medication. All these therapeutic measures must be adjusted to the individual child's needs and controlled and reviewed at regular intervals.

REFERENCES