Exercise Programmes in the Treatment of Children with Learning Disabilities

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Contents

Summary ................................................................. 55
1. Methods of Measuring Motor Proficiency ......................... 56
2. Motor Proficiency and Learning Disability ...................... 57
3. Motor Proficiency and Body Size ............................... 59
4. Gender Differences in Motor Proficiency ................. 59
   4.1 Nondisabled Children ................................ 59
   4.2 Children with Learning Disability .................. 60
5. Motor Proficiency and Self-Worth ............................. 61
   5.1 Physical Competence and Self-Worth .................. 61
   5.2 Self-Worth and Learning Disabilities ............... 62
   5.3 Motor Proficiency and Self-Worth .................. 63
6. Motor Proficiency and Social Behaviour ...................... 64
7. Physical Activity in the Treatment of a Learning Disability 64
8. Conclusions ................................................................ 68

Summary

Learning disability is characterised by a discrepancy between achievement and assessed intellectual ability. Children with this problem commonly (but not invariably) show impaired motor proficiency, as assessed by such instruments as the Bruininks-Oseretsky Test of Motor Proficiency. It has been hypothesised that poor motor performance and/or poor social skills lead to exclusion from games, creating a vicious cycle of decreasing participation, decreasing competence, and deterioration of self-worth and increasing social maladjustment.

Attempts to break the vicious cycle with programmes designed to enhance motor proficiency have been uniformly unsuccessful. There is limited experimental evidence to support the view that structured physical activity programmes with an embedded social skills training component can be an effective method of enhancing both actual motor ability and self-perception of physical and academic competence. However, a controlled comparison with small-group, academic instruction has shown that, from the educational perspective, a physical activity–based intervention is no more effective than other forms of special attention. The main argument for delivering social skills training through a
physical activity programme lies not in a unique impact upon learning disability, but rather in terms of the other well-established long term health benefits of exercise.

The term learning disability is normally reserved for students with a cognitive disorder[1] where the problem is a discrepancy between achievement and assessed intellectual ability that cannot be attributed to sociocultural factors, a physical handicap, an impairment of vision or hearing or an emotional disorder.[2] The disability may become manifest in either an academic or a social situation involving spoken language or other symbols of communication. Children with learning disability seemingly constitute a heterogeneous group.[3-6] Some have a below average intelligence quotient (IQ), whereas in others the IQ is average or above average.[6] The most common deficit[6,7] is in the reception of language (listening and reading skills), but other affected children have problems in language processing (thinking, conceptualising and organising), expression (talking, spelling and writing) and in mathematical skills. Children who find difficulty in mathematics and written work[8,9] often show impaired visual, spatial and motor function; however, they may compensate for such problems by demonstrating above average verbal skills.[10] Some authors describe an attention deficit/hyperactivity disorder subtype of learning disability, manifested by problems of concentration, impulsivity, difficulties with peers and social immaturity.[16,7,11-14]

Learning disability is sometimes an isolated phenomenon, but it is often associated with perceptual handicaps, brain injuries, dyslexia and developmental aphasia.[15] Behavioural problems (hyperactivity, limited attention span, impulsivity, a sense of poor self-worth and a lack of social skills)[16-19] plus perceptual-motor impairments (poor equilibrium, visual-motor control and coordination) commonly hamper participation in physical education programmes.[20,21] Frequent negative experiences in the gymnasium, playground or classroom cause a vicious cycle of a deteriorating self-concept, impaired development of social skills, a dislike of both physical activity and academic programmes and a lack of attention in the classroom,[22,23] so that by adulthood the individual’s physical, social and intellectual potential have not been realised.[24]

Because of problems in coordination, there have been frequent attempts to improve not only perceptual-motor performance, but also the academic and cognitive skills of children with learning disability by programmes of perceptual-motor training. Such initiatives have proven singularly ineffective.[25-31]

Nevertheless, hope has persisted that a well-designed physical activity intervention might improve the physical skills of children with learning disabilities, leading to gains in self-worth, with resultant improvements in both academic performance and social skills outside of the classroom. This review examines interactions between motor proficiency, self-worth and social behaviour in children with learning disabilities, focusing upon the possible therapeutic value of physical activity programmes with an embedded component of social skills training and problem-solving.

1. Methods of Measuring Motor Proficiency

There is a wide variety of field tests of general motor abilities, fundamental movement skills and specialised movement skills,[32-35] but the Bruininks-Oseretsky Test of motor proficiency is by far the most frequently used instrument in the study of children with learning disability.[34,36,37] Various possible modifications of the test protocol are reviewed by Bialer et al.[38] The usually adopted procedures are based on the anticipated motor development of the child, plus factor analyses of both motor performance and scores for individual test items.[39] The standardised scores are reliable, with little evidence of test learning or