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Mini Review

Learning Disability and Medico-Legal Implications

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Abstract

Learning Disability is a pediatric disorder of reading, writing or arithmetic skills. When it's no secondary to known diseases (called Not Otherwise Specified) as autism, epilepsy or genetic pathologies, it causes many diagnostic difficulties. Especially if as in Italy the diagnosis involves the provision of benefits, also economic benefits. The available diagnostic instruments should have a sensible and specific diagnostic to win the simulation risk of siymptomps and for this reason a greater interest of research in this field is desiderable.

Keywords: Learning disability; Learning disorder; Medico-legal implications; Simulation; Indemnity

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Introduction

Learning Disability or Disorder (LD) is an extremely heterogeneous clinical group diagnosed by the significant difficulties in acquiring or using reading, writing or arithmetic skills. The prevalence is 4-9% for reading disorder and 3-7 % math disorder[1]. Developmental dyslexia is more common disorder with prevalence until 17,5% of childrens. They are 80% of LD[2]. Because the children's with LD in one domins have often deficit in the other domins[3] and the patients share a genetic variance[4] , the last version of Diagnostic and Statistical Manual of Mental Disorders (V edition) with generic term of Learning Disorder extended diagnostic category to all skills (reading, writing or arithmetic) that were classified as separate disorders in previous editions.

The diagnosis is usually in the school time, even if Denhoff et al. hypothesized the possibility of a diagnosis as early as the first year of life[5]!

LD appears to be stable during development: transverse and longitudinal data indicate that it continues into adolescence and adulthood[6]. Among the most used tests there is the Wechsler Intelligence Scale for Children[7]. It is a method for the determination of intelligence in children and it is the result of a combination of evaluation parameters: verbal comprehension, perceptual reasoning, working memory, processing speed and intelligence scales. This test identifies the children below the average in cognitive skills requiring therapeutic intervention. There was an increasing interest for the cognitive mechanisms underlying LD[8]. In the specific forms LD is associated with many pathological conditions.

Attention-Deficit/Hyperactivity Disorder (ADHD): Studies in children with ADHD show a prevalence of co-occurrent LD ranging from 25% to 40%. And associations were found for ADHD and LD with genetic alterations as with the haplotype 218A/-6526G of TPH gene[9,10].

In schizophrenia the cause would be a primary defect in the development temporal with alteration of associative links and cortical-subcortical circuits[11].

In general conduct disorders are five times more frequent in the childrens with LD[12]. In some cases the pathological alteration at the base of the disorder was found in agenesis of the corpus callosum[13]. Epilepsy: therapy with valproic acid reduces epileptiform discharges and has a cognitive enhancing effect[14]. A etiological problem is placed in the form Not Otherwise Specified. It is subclinical form of which isn't known the cause and which often has an association with a normal IQ of the children[15].

Many hypotheses have been advanced about it, as alterations during the gestational period. There is an asymmetric process of maturation of the two hemispheres as evidenced by studies on fetal brains[16]. Ounsted and Taylor argue that the left hemisphere mature later, especially in males[17].

And an important factor that slows the growth of the convexity of the left hemisphere in utero is testosterone, and especially in males because the fetal testes secrete testosterone. The effect of testosterone on neuronal development has been documented in structures such as the preoptic nucleus[18]. And so it would explain the anomalies in the formation of the left hemisphere, where is located the function of language, especially in males, such as those described by Galaburda and Kemper[19].

For the same reason, in fact, the frequency of LD would be greater in the left-handedness[20]: delayed growth in the left hemisphere as a result of testosterone would explain the shift of manual operation to the right hemisphere.

An important role is represented by parental relations: an internalizing behavior in children appeared associated with dimensions pointing to dismissing attachment in fathers and to preoccupied attachment in mothers, while externalizing behavior appeared associated with dimensions indicating preoccupied

attachment in both parents[21].

In addition the maternal stress plays a probably significant role in LD: in the study of Antshel and Joseph, mothers of children with Reading Disorder reported higher levels of general stress, and the severity of Learning Disorder was strongly associated with maternal stress in the sample of children with Non Verbal Learning Disorder. A high predictive value of maternal stress was just the lower performance IQ of the child[22].

Finally, psychopathological dynamics are etiologically associated to LD as factors of aggravation of pathology. Children and adolescents with LD have a high incidence of co-occurrent emotional and behavioral problems[23]. Many studies have shown that 24-54% of LD subjects present serious emotional, social and behavioral problems. This incidence is four times higher than peers without LD[24]. Children with LD showed a higher incidence of depressive symptoms and difficulty in social operation[25]. The sense of frustration and failure activates a vicious cycle that leads the child towards ever greater cognitive and socio-emotional impoverishment[26].

The real possibility that by this disorder can derive benefits (for example academic benefits as extended test time or alternative courses) and profits, also economic profit (In Italy is dispensed a indemnity - approximately 280 €), according to the legislation of various countries as the Americans with Disabilities Act of 1990 or L. 289/1990 in Italy, makes LD a serious medico-legal problem[27].

The risk of a simulation of the symptoms and the validity of diagnostic tests has had a growing attention in recent years[28], but still little has been published about these problems. Between the main Authors remind Hartman (2002)[29] according to which the assessment of the validity of the response, which can take the form of symptoms untrue or distorted reports, or also the intentional production of a poor performance in neuropsychological or psychological testing, has become indispensable in any diagnosis and also it requires the use of neuropsychological measures and methods.

Without valid methods for the identification of the accuracy of the test, to complement to the certification of the specialist, the colleagues, especially those who work in the medico-legal side and that often have only one contact with the patient holder a benefit, does not have the means to question the work of the specialist[30]. And they cannot do anything but satisfy a system of health and social policy assistencialism with serious loss of resources.

Conclusion

The diagnostic evaluation of the LD in legal medicine should pass across a meticulous analysis of the accuracy of the used tools in the consciousness of the limits of employment.

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