

Neuropsychiatric Disorders in a Outpatient Clinic of School Underachievement

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Abstract: The formal education is essential to the cognitive, cultural and economic development of a population and its impairment represents a social problem that results, individually, in low self esteem and discrimination between peers. Therefore, the Academic League of Pediatrics' Outpatient Clinic of School Underachievement is a project Western Paraná State University (UNIOESTE) School of Medicine's undergraduates, which aim to evaluate and to promote assistance of schoolchildren referred from elementary school of Cascavel City that present school underachievement.

Key words: neuropsychiatric disorders, school health, School-age child, elementary school, evaluation

1. Introduction

According to literature, approximately 15 to 20% of children have difficulties related to the learning process and, thereafter, poor school performance. School underachievement is a symptom that can be related to multiple etiologies and results in emotional problems, family concern and has repercussions in several spheres. As universal access to education was implemented in national territory, the concerns related to low school performance have increased. Considering that the pediatricians are the professionals who follow the children throughout their development, it's up to them to identify learning related dysfunctions, diagnose and perform the proper management of the patient through multidisciplinary actions amongst other health care professionals, in order to provide a healthy mental development and to improve the academic performance in children.

Academic League of Pediatrics' Outpatient Clinic of School Underachievement (ALP-OCSU) is a project of Western Paraná State University (UNIOESTE) School of Medicine' undergraduates implemented in 2012, aiming to evaluate school-age children with school underachievement. The team is composed by assistant professor of pediatrics, School of Medicine' undergraduates, one psychology's undergraduate and one speech therapy's undergraduate. This team attend to four children weekly who were referred from local elementary schools, with complaints concerning learning difficulties. Therefore, they are able to make a proper diagnosis and take the correct conduct that involve medicines and/or behavioral therapy, in additional to possible referrals to others health care professionals, such as psychologists, neuropediatricians, speech therapist and psychopedagogists. This paper aimed to evaluate children attended at an outpatient clinic of academic underachievement.

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2. Methods

The ALP-OCSU provides assistance to children in Western of Paraná. School children are usually referred by their respective elementary school, which request assistance reporting the difficulties presented by student in school environment, in addition to attaching the student's grades reports.

During the appointments, the child is submitted to clinical exam, which includes anamnesis, physical and neurological exams and three screening tools Brazilian version: 1) Conners' Rating Scale-Francisco Rosa Neto for Attention-deficit/hyperactivity disorder, 2) Pediatric Symptom Checklist and 3) Swanson, Nolan, and Pelham Rating Scale (SNAP-IV) for diagnostic purposes. Following the evaluation, sometimes, depending on the situation, may to take additional complementary exams, like head tomography (CT) or electroencephalogram (EEG), in addition to blood and urine tests. When established diagnostic, the child is periodically submitted to follow-up in order to define if the treatment is being effective and measure its progress.

The appointments occur every friday, during all morning. While in appointment, ALP-OCSU's members take turns, being obligatory the presence of at least two of them in each shift. Besides, they count with the help of additional mental health care professionals, such as psychology's and speech therapist's undergraduates, which provide, whenever necessary, guidance to the child and/or family and help the outcome of the appointment and the therapeutic and diagnostic plans.

Based on data obtained from the Tasy® medical records platform, the profile of patients seen at the ALP-OCSU was established analytically and retrospectively, considering sex, age and diagnosis related to insufficient academic performance. In addition, literature review was carried out, using the following databases: Pubmed/MEDLINE; Scielo, LILACS, text-books and Cochrane.

3. Results and Discussion

Table 1 shows the number of children attended by the ALP-OCSU until the moment of the present study, with a total of 80 children distributed according to their gender and diagnosis. Of the total, 57 were male (71.25%) and 23 were female (28.75%). The patients analyzed belonged to age group between 4 and 14 years old and average age was 8.81 years old. The frequency of age prevailed in the group of 8 and 10 years old, with 17 (21.25%) patients in each group and was lower in the age groups of 4 and 14 years old, in which there were only one (1.25%) patient with these ages.

The total number of diagnosis raised by gender being 45 in females and 81 in males, which generates an average of 1.95 diagnosis per female patient and 1.42 diagnoses per male patient. Thus, it perceives a total average ratio of 1.57 diagnosis per patient evaluated by ALP-OCSU with school underachievement.

In 25% of the patients (n = 20), the diagnosis raised was only one condition. In 75% of the patients (n = 60) the diagnosis were two or more conditions, among those 50% (n = 40) had two diagnoses and 25% (n = 20) had three or more diagnoses. In 35% (n = 28) of the total number of patients, there were still pending possible diagnostics. The most prevalent confirmed diagnoses were classical Attention-Deficit Hyperactivity Disorder (ADHD) (n = 31), dyslexia (n=28), immaturity (n = 17), inattention (n = 13), phonological deviation (n = 6) and conduct disorder (n = 4). ADHD was the most frequent diagnosis. Several studies show a high prevalence of comorbidities associated with ADHD, around 20 to 50%, as our study, which shows the importance of an interdisciplinary approach as there are many disorders associated to ADHD, such as anxiety and conduct disorders,

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which require different clinical interventions and differentiated pharmacological treatment. We also found that comorbidities dyslexia and conduct disorder were the most frequent, this reinforces the idea that comorbidities have a higher impact on the cognitive and attention performance of an individual with ADHD (Tramontina, 2003; Garland, 2001; Faraone, 2003; Brown, 2003; Rizzutti, 2008).

Table 1 Prevalence of Neuropsychiatric Disorders by Gender Evaluated by ALP-OCSU

Diagnosis	Female	Male	Total
ADHD (Attention Deficit Hyperactivity Disorder)	8	23	31
Dyslexia	11	17	28
Generalized anxiety disorder	1	1	2
Separation anxiety disorder	0	1	1
Immaturity	8	9	17
Childhood depression	0	2	2
Inattention	7	6	13
Dyscalculia	0	1	1
Lack of stimulation associated with lack of limits	0	1	1
Dyslalia	1	1	2
Speech delay	0	2	2
Phonological deviation	2	4	6
Headache/Migraine	0	2	2
Dysgraphia	0	2	2
Motor coordination disorder	0	1	1
Family disassembly	0	1	1
Intellectual disability	2	1	3
Conduct disorder	1	3	4
Difficulty adapting in the new school	0	1	1
Bullying victim	1	1	2
Normal adolescent syndrome	1	1	2
Learning gap	1	0	1
Autism	1	0	1
In evaluation	5	23	28

School underachievement is characterized by insufficient school performance for given age group and level of education, that is, the student presents behaviors, conducts and results below the expected for the group to which it belongs. Thus, the children become part of the rates of school failure because they do not meet the minimal expectations.

The causes of low school performance have several etiologies, which can be divided into three main categories: extrinsic causes, intrinsic causes and mixed causes. The extrinsic causes are associated with School Difficulty (SD) and are characterized by poor school performance, related to socio-environmental factors which are external to child, although the child has good organic conditioning. The intrinsic causes are related to Learning Disorder (LD) and include neuropsychological and physiological factors. The mixed causes, on the other hand, result from the interaction of the two previous categories (Ciasca, 2003; Capellini, 2010; DSM-V, 2014). School Difficulties (SD) result from extrinsic processes and are involved in reduction in school performance due to

pedagogic and social causes, among which one can list: unfavorable sociocultural conditions, low family environment stimulation, scarce sociolinguistic interaction in community and inadequate teaching methods to the parties involved (Feigin, 2008; Fletcher, 2009).

Contrastively, learning disorder (LD) results from intrinsic processes to the subject, such as: 1) Specific learning disorders (reading, writing and mathematics); 2) Attention Deficit Hyperactivity Disorder (ADHD); 3) Coordination development disorder (CDD) and 4) Other neuropsychiatric disorders, neurological pathologies and medical conditions (DSM-V, 2014; Feigin, 2008; Shawitz, 1998).

According to Table 1, among the patients followed by the ALP-OCSU, five children (6%) presented SD related to etiologies such as lack of stimulation associated with lack of limits, family disassembly, difficulty adapting in the new school and bullying. Contrastingly, 75 children (94%) had LD and, among them, the most prevalent organic cause was ADHD (38.75%), followed by dyslexia (35%), immaturity (21.25%), inattention (16.25%), phonological deviation (7.5%) and conduct disorder (5%). Regarding gender, it is highlighted the fact that ADHD, dyslexia and conduct disorder were more prevalent in males. The attention deficit hyperactivity disorder (ADHD) is one of the most frequent neurodevelopmental disorders, with an estimated occurrence of 3% to 5% in schooling children and also that prevalence is highest for boys, as our study.

4. Conclusion

In this study, ADHD was diagnosis most frequent. There were a lot comorbidities as in medical literature.

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