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ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD):*

A Practical Scale for Pediatricians

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Attention deficit hyperactivity disorder (ADHD) is a common disturbance causing school failure and social problems. Early diagnosis and intervention allow ADHD children to adjust and succeed at school and in daily life. To identify these patients, we designed a practical questionnaire for parents. When tested on children with ADHD (n=100), children with psychiatric problems (n=35), and on age- and sex-mached control children (n=100), this scale was found to be highly useful in distinguishing these three groups from each other, especially after the identification and elimination of items with lower specificity. The use of the Hacettepe ADHD scale is recommended for pediatricians, general practitioners and teachers to allow earlier diagnosis of this condition. *Key words: attention deficit, hyperactivity, diagnosis.*

Attention deficit hyperactivity disorder (ADHD) is among the most frequent and emphasized diagnoses in child and adolescent psychiatry clinics. Ten percent of all first applications to the Department of Child and Adolescent Psychiatry in Hacettepe University are due to ADHD[1]. It is widely accepted that ADHD starts in the preschool period and continues into adulthood. Although the symptoms may change over time, they usually impair almost all aspects of the child's educational and daily life and, if untreated, create intense psychological and social problems. Most important, this disorder can be treated successfully by a collaborative approach from the school, family and medical staff, emphasizing the need for early diagnosis and treatment[2,3].

The majority of children with ADHD are brought for medical attention because of failure to learn how to read and write, or of failure to adjust when they first start school. The first professional these children encounter is usually a pediatrician, and the first diagnosis they receive is mental retardation. However, their school achievement improves when an early diagnosis of ADHD is made and attention problems and impulsivity are appropriately treated. It is therefore extremely important for a pediatrician to recognize this entity. The diagnosis of ADHD in child and adolescent psychiatry clinics involves extensive testing using

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various scoring systems unavailable to pediatricians. In order to assist pediatricians in identifying ADHD and increase the rate of correct referral, the Department of Child and Adolescent Psychiatry in Hacettepe University developed the easy-to-score scale presented in this study.

Material and Methods

The Hacettepe Attention Deficit Hyperactivity Scale (HADHS) is a questionnaire addressed to mothers and fathers who fill it out jointly by discussing each item. All items are scored on a scale of 0 to 2, with increasing scores representing more severe symptoms and a cutt off score of 19. Scores 19 and above could suggest ADHD (Table I).

Table I: Hacettepe Attention Deficit Hyperactivity Scale (HADHS)

	No	Sometimes	Frequently
1. Has impulsive behavior (hitting friend with no reason, pushing, etc.)			
2. Moves continuously			
3. Is restless, always standing up			
4. Moves a lot, with dangerous acts, "climbing walls"			
5. Does not complete work			
6. Does not do homework			
7. Has nail biting or thumb sucking			
8. Retaliates			
9. Is stubborn, insists on demands			
10. Has problems establishing and maintaining friendships			
11. Bullies other children			
12. Is cruel towards other children			
13. Lies or tells imaginary stories			
14. Does inappropriate things as told by other children			
15. Does not comply with rules and restrictions			
16. Is quarrelsome			
17. Is gloomy and sulky			
18. Gets angry easily			
19. Cries easily			
20. Has frequent and marked mood swings			
21. Daydreams			
22. Feelings get hurt easily			
23. Is unhappy at school			
24. Bothers you more than other children			
25. Steals			
26. Has bodily complaints			
27. Gets pushed around and made fun of by other children			
28. Gets distracted easily, cannot concentrate on work			
29. Talks without thinking			

The value of this scale in describing the specific symptoms in ADHD was determined by testing three groups of children:

Group I: ADHD group consisted of children who presented to Hacettepe University Department of Child and Adolescent Psychiatry for the first time in 1995-96 and who received the diagnosis of ADHD by DSM-IV criteria (n=100, 84 boys, 16 girls), mean age 8.19 (6-12) years.

Group II: Children with psychological symptoms seen in the same department in the same period (n=35, 30 boys, 5 girls), mean age 9.06 (6-12) years.

Group III: Normal control group consisting of age- and sex-matched children, not-selected from ADHD children's classrooms (n=100, 70 boys, 30 girls), mean age 8.73 (6-12) years.

Analysis: Analysis of variance, t test and chi-square test were applied to each item separately and also to the total score.

Results

All items of the scale were developed according to the features of ADHD; however, some items proved more valuable in distinguishing children with ADHD from the other two groups (the mean scores of each item for the three groups I, II, III follow in parentheses). Most often mentioned were: "has impulsive behavior" ($\bar{X}$: 1.81, 0.82, 0.71), "moves continuously" ($\bar{X}$: 1.52, 0.76, 0.92), "retaliates" ($\bar{X}$: 1.32, 1.00, 0.75), "gets angry easily" ($\bar{X}$: 1.49, 1.10, 0.67), and "is stubborn, insists on demands" ($\bar{X}$: 1.41, 1.08, 0.75). Some other items frequently mentioned by parents included: "does not complete homework" ($\bar{X}$: 1.31, 0.76, 0.45), "is restless, always standing up" ($\bar{X}$: 1.27, 0.72, 0.37), "moves a lot, with dangerous acts", "climbing walls" ($\bar{X}$: 1.06, 0.42, 0.17), and "bothers you more than other children" ($\bar{X}$: 1.05, 0.28, 0.13). Features like "gets angry easily", "retaliates", "is stubborn, insists on demands", which are frequently thought to be typical for ADHD, were also frequently found in the other two groups, indicating low specificity.

Discussion

Attention deficit hyperactivity disorder is an etiologically heterogenous entity with several predisposing medical conditions, such as perinatal events; prematurity; genetic, autoimmune, or allergic disturbances; abnormalities in trace metal metabolism; fragile X syndrome; lead intoxication; and also family attitude and psychosocial factors[3]. The variety of associated conditions points to the importance of a detailed physical and neurological evaluation. Recognition of ADHD by pediatricians is the first step for correct evaluation and referral.

These results show that the Hacettepe Attention Deficit Hyperactivity Scale can be used reliably in screening children for ADHD, and also in the diagnosis and follow-up after treatment, especially when interpreted in conjunction with other criteria. The ease of administration and interpretation makes it useful for professional groups frequently dealing with school-age children such as pediatricians, general practitioners and teachers. Early diagnosis and appropriate treatment of children with ADHD will decrease the risk of behavioral problems and provide an economical way of preventing further complications. We therefore recommend the widespread use of this practical scale by pediatricians and all professionals taking care of children.

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