

Lecture 3

Book: Students with Learning Disabilities

Chapter 3 Attention Deficit Hyperactivity Disorder

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Summary

What is ADHD: From the medical perspective, ADHD is suspected to be a neurotransmitter imbalance or defects in neural connections. A deficiency in the production of the neurotransmitter norepinephrine or dopamine results in decreased stimulation of the brain and a consequent dysfunction of the neural circuits underlying attention. Researchers have also studied the area measurements of the corpus callosum on MRI scans and found that the corpus callosum seems smaller in children with ADHD than in children without it. They also differed from children without disabilities with respect to the width of the right frontal region of the brain, thus pointing to a deviation in the expected pattern of symmetry. In most normal brains the right frontal region is larger than the left frontal region but children with ADHD showed symmetry of the frontal regions.

According to DSM-IV-Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) the term attention deficit/hyperactivity disorder is maintained and three subtypes have been listed i.e. predominantly inattentive type, predominantly hyperactive-impulsive type and combined type.

Characteristics of students with ADHD: According to DSM-IV-TR, individuals with ADHD show “low frustration tolerance, temper outbursts, bossiness, stubbornness, excessive and frequent insistence that requests be met, mood lability (fluctuation), demoralization, rejection by peers and poor self esteem.” Students with ADHD often have difficulty with family and peer relationships and academics are affected. Young children with ADHD move excessively and are difficult to contain. As they mature, symptoms usually become less conspicuous. By late childhood and early adolescence, signs of excessive gross motor activity are less common and hyperactivity symptoms may be confined to fidgeting or an inner feeling of jitteriness or restlessness.

ADHD and academic difficulties: As many as 71% of students with ADHD, particularly those with the inattentive subtype have difficulties in academics. In a study of children with and without ADHD, results revealed that students with ADHD demonstrated lower performance on measures of academic achievement and school functioning than did children without ADHD.

Children with ADHD are also more likely to have execution function disorder (EFD) – a problem with organizing and schedules, than children without ADHD. It was also seen that children with both ADHD and EFD perform significantly worse on academic outcomes than children with ADHD only.

ADHD and learning disabilities: Although students with ADHD often have academic difficulties, according to Silver (1990), learning disability affects the brains' ability to learn while ADHD interferes with an individuals' availability for learning. Students with ADHD are impaired in the control and inhibition of impulses, whereas the students with learning disabilities were impaired in phonological (sound structure of words) awareness, verbal memory span and storytelling. In studies conducted, students with both disorders showed additional pervasive attention problems and visual-motor problems, and all students exhibited impaired performance in tasks of visual-motor precision and name retrieval. Additionally, children with ADHD with hyperactivity were rated as being more disruptive i.e. shifting tasks, acting without thinking, frequently calling out in class, and having difficulty taking turns whereas children with ADHD without hyperactivity were described as more withdrawn, prone to day dreaming, underactive and shy.

ADHD and IDEA: ADHD is not identified as a separate disability within IDEA. Currently students with ADHD may be eligible for special education services under the Other Health Impairment category if problems of limited alertness negatively affect academic performance. They may also receive services by meeting the criteria of existing special education categories such as specific learning disability or serious emotional disturbance.

Prevalence of ADHD: ADHD is believed to be the most common psychiatric syndrome in childhood. The estimated prevalence of the disorder ranges from as low as 2% to as high as 17% of the general population and from 4% to 12% of children 6 to 12 years old. The prevalence of ADHD is estimated at 3% to 5% in school age children. ADHD prevalence rates for students labeled as having learning disabilities range from 41% to 80%, and estimates of learning disabilities in the ADHD population range from 9% to 80%. Thus, there is a strong association of overlap between ADHD and learning disabilities.

Diagnostic assessment of ADHD are the following:

- **Rating scales:** They are commonly used to aid in the diagnosis of ADHD. Teachers, parents of primary care givers complete rating scales that typically list cognitive, emotional and behavioral problems that are associated with individuals with ADHD. Some of the commonly used rating scales are Conners' Rating Scales-Revised, Conners' Adult ADHD Rating Scale (CAARS), ADHD Symptoms Rating Scale (ADHD-RS), Attention Deficit Disorders Evaluation Scale-Third Edition ADHD Rating Scale-IV, NICHQ Vanderbilt Assessment Scales and SNAP-IV.

- **Medical examinations:** This is important to rule out other disorders that may cause similar symptoms. Additionally, to receive services under the Other Health Impairment (OHI) category of the IDEA 2004, the diagnosis must be made by a physician. The medical exam includes an interview, a physical examination, and a review of the child's history and medical records.

Treatment of students with ADHD

- **Psychopharmacologic Treatment of ADHD:** Psychostimulant medications are frequently used to treat students with attention deficit disorders. They appear to reduce inhibition errors, quicken reaction time and reduce variability in reaction time. They also increase the arousal or alertness of the central nervous system, stimulate the production of the chemical neurotransmitters needed to send information from the brain stem to the parts of the brain that deal with attention, inhibition and activity, and make individuals more sensitive to reinforcers in the environment thus increasing their attention spans and persistence in responding to environmental events. Although these medication have resulted in improved benefits, lower dosages may be possible when combined with school-based interventions. Thus medication is only one part of the program.
- **Behavioral and social interventions:** Many students with ADHD exhibit social or behavioral problems that interfere with learning and establishing positive peer relationships. Several strategies are effective in improving social skills and behavior such as:
 - i) **Functional behavior assessment:** FBA involves direct observation to analyze an individual's behavior in relation to social and physical aspects of the environment. Specifically, antecedents and consequences are evaluated to determine what predicts or maintains problem behavior. Data from the FBA are used to develop a behavior intervention plan (BIP) which uses a problem-solving focus to help prevent problem behaviors and helps students acquire new social and self control skills
 - ii) **Social skills training:** These programs teach students social skills such as making eye contact, interpreting social cues, and making friends. According to Leffert and Siperstein (2003), the guidelines to implement social skills are:
 - (1) Work with other teachers, specialists and paraprofessionals to ensure that social skills instruction extends to multiple locations and settings.
 - (2) Compare different social skills training packages and curricula before selecting one.
 - (3) Choose the curriculum that best suits students' identified needs.
 - (4) Carefully assess student's social skills prior to initiating training to identify student specific goals and periodically reevaluate whether progress is occurring.

- (5) Be sure to plan actively to promote student's transfer and generalization of skills to key situations and settings inside and outside of the classroom and periodically monitor students' performance in these situations and settings.
 - (6) If training may not be having the desired effect, develop a working hypothesis for why it's not working and revise the instructional plan accordingly.
 - (7) Consider and address environmental barriers that may be interfering with student progress and indentify and mobilize potential environmental supports for skill acquisition, such as peers.
- iii) Social stories: It is a short story written by a teacher or a professional team who work with the student. It is written from the student's point of view to encourage appropriate social behavior. A key purpose of social stories is to help children read social cues and understand social situations. This strategy can be implemented by teachers, paraprofessionals, service providers, or parents and may be included as a component of the individualized education program (IEP) or the BIP.

Increasing Attention and on-task behavior

- **Contingency management techniques:** It provides positive reinforcement to students for demonstrating a desired target behavior. These techniques may be individualized or administered to a group. In individual contingency plans, the teacher identifies target behavior and rewards for specific students. Group contingency plans target a behavior for the whole class but rewards may be provided to the group or individuals.
- **Self regulation strategies:** students can be taught to self-monitor and self-regulate their behavior and attention in classroom settings. There are 2 types i.e. self monitoring and self reinforcement strategies. It helps students assess their own behavior and record their performance during a specified time period. The student is taught how to recognize the difference between paying attention and not paying attention and is prompted to evaluate whether or not he/ she is paying attention and to record behavior on a chart.
- **Academic interventions:** they are the following
 - i. Content enhancements – They are techniques that enable the teacher to target the critical content and help students identify, organize, comprehend and retain that information. After this, the teacher selects or creates an instructional device and presents the material in a manner that promotes learning and retention.
 - ii. Peer tutoring – It is an instructional arrangement in which the teacher pairs two students in a tutor-free relationship to promote learning of academic skills or subject content. The teacher determines the academic task and provides the instructional materials.
 - iii. Computer assisted instruction – (CAI) It refers to the software programs that are designed to provide instruction usually in a particular content area. Studies show that this is an effective medium of instruction for students with ADHD and learning disabilities. For example, the software program KidTools is an electronic

computer support system that is designed to teach self-regulation, strategic learning and self-determination.

Daily is Behavior Report Cards (DBRC) as a home-school partnership: DBRC provides a method of monitoring students behavior and gathering formative data that will help guide instruction. It targets a specified behavior that measured daily, usually by the classroom teacher, and the results are shared with someone other than the rater. Target behaviors may include off-task behavior, inappropriate verbalizations, work completion etc. Creating a DBRC requires planning and cooperation among the parent/ caregiver, the teacher and the student. Together, the group identifies the target behavior, selects the time and location to observe, designs the rating scale to be used for the observations, and creates the DBRC.