

Case Study: Johnny
Attention Deficit Hyperactivity Disorder
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Introduction / Abstract

Counseling requires knowledge of many different behaviors and disorders. In children, one of the most common problem behaviors we are faced with is Attention Deficit with Hyperactivity Disorder (ADHD). A child is exhibiting this behavior when they display inappropriate degrees of inattention, impulsiveness and hyperactivity. (APA, 1994) Most children display this behavior to one degree or another, but some require special treatment. To become more informed on this subject, we will look at this disorder in the context of a case study of **Johnny**, who exhibits some typical symptoms. To do this we will examine Johnny's history, perform a multiaxial diagnosis, review diagnostic criteria and features, discuss etiology and treatment and briefly examine the prognosis for these patients.

Case Vignette - Johnny

Johnny, a 8 year old boy, was referred for treatment to the school psychologist by an exasperated teaching staff. In a written report, they described the following behaviors:

1. He never stays in his seat whether he is busy doing work, or listening to the teacher talk.
2. When he does sit, his hands and feet are constantly moving and fidgeting
3. Interrupts and talks non-stop
4. Can't wait his turn. He upsets the other students because he will push them out of the way to get what he wants. This doesn't seem malicious, he just doesn't appear to notice them.
5. In PE, he wont stop running even when they are supposed to. When he does play a game, he cannot work with the others (e.g. never passes the ball)
6. During recess, he interrupts others activities, plays with them for a while, and then goes on to the next activity.
7. In the classroom, he often loses his materials, assignments or personal belongings.
8. Does not seem to listen when addressed, called upon or for correction. The teachers get the feeling that he doesn't care.
9. Can't organize his tasks. Will get sidetracked very easily.
10. Avoids almost every task except games. Doesn't want to do any homework.
11. When he does do school or home work, he often makes careless mistakes such as not putting his name on assignments.

These problems have been common since he started school this year (8 months ago) and since he started elementary school.

Upon meeting with Johnny's parents, the school counselor found out that Johnny had been this way for as long as they could remember. He is their only child, so even though he seemed "very active" they assumed that this behavior was normal. They especially noticed the difference at age 5 when he started Kindergarten, where they could see him relate to other kids. His mother had taken care of him until that time and he didn't get that many opportunities to interact with other kids. They both agreed that this behavior had not improved, and were as anxious as the teachers to come to some sort of agreement as to how to improve Johnny's behavior. They reported:

1. He doesn't want to go to sleep, he will run around and then finally "collapse" at bed time
2. Doesn't finish chores. (e.g. will start to make the bed and stop half way through to start something else)
3. Won't sit still for dinner, sometimes will throw food when told to "sit and eat"

Medically, Johnny has been a healthy child, he had recently been in for a check up and the doctor remarked that "...other than having to get the nurse to help me do the exam, everything looked fine."

DSM-IV Multiaxial Evaluation

Johnny's multiaxial evaluation is listed below:

Axes	Codes	Description
Axis I	314.01	Attention-Deficit/Hyperactivity Disorder, Combined Type
Axis II	V71.09	No Diagnosis
Axis III		None
Axis IV		Academic problems, Discord with teachers and classmates
Axis V	GAF =50 (Current) SOFAS= 50 (DFS, GARF - Not Applicable)	

History and Conceptualization of the Disorder

There have been some very significant changes in the most recent edition of the DSM-IV in terminology, diagnostic criterion, and useability. The very terminology used to identify this disorder has changed with the recent edition of the DSM-IV (Bender & McLaughlin, 1995). In the DSM-III-R (APA, 1987), there were 2 categories that are now covered as one. Before the DSM-IV, Attention Deficit/Hyperactivity was one category, while Undifferentiated Attention Deficit Disorder (without Hyperactivity) was the other (covering the case of a child that was inattentive without the hyperactive symptomology). Now there are three categories to cover all permutations of the disorder: Combined Type, Predominately Inattentive Type and Predominately Hyperactive-Impulsive Type. This change was indicated due to current opinion that this is best diagnosed as a unitary disorder with different symptom patterns (APA, 1994). In addition, now there is a category for the predominantly hyperactive child.

The categories for diagnosis have also been updated. Criterion A further categorizes the symptoms into: *inattention*, *hyperactivity*, and *impulsivity*. Criterion C requires that symptoms be present in more than 1 location (e.g. home and school) to reduce false positive diagnosis (APA, 1994). The current edition is now a much more comprehensive and usable tool for the clinician and counselor.

Diagnostic Criteria for the Disorder

The DSM-IV (APA, 1994) lists the following as diagnostic criteria for Attention Deficit/Hyperactivity Disorder (ADHD) (Note that **Johnny** meets the underlined criteria)

A. Either (1) or (2)

- (1) 6 (or more) of the following symptoms of **inattention** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with development level:

Inattention

- (a) often fails to give close attention to details or makes careless mistakes in schoolwork, work or other activities
- (b) often has difficulty sustaining attention in tasks or play activities
- (c) often does not seem to listen when spoken to directly
- (d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
- (e) often has difficulty organizing tasks and activities
- (f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
- (g) often loses things necessary for tasks or activities (e.g. toys, school assignments, pencils, books, or tools)
- (h) is often easily distracted by extraneous stimuli
- (i) is often forgetful in daily activities

- (2) 6 (or more) of the following symptoms of **hyperactivity-impulsivity** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with development level:

Hyperactivity

- (a) often fidgets with hands or feet or squirms in seat
- (b) often leaves seat in classroom or in other situations in which remaining seated is expected
- (c) often runs around or climbs excessively in situations in which it is inappropriate (in adolescents or adults may be limited to subjective feelings of restlessness)
- (d) often has difficulty playing or engaging in leisure activities quietly
- (e) is often "on the go", or often acts as if "driven by a motor"
- (f) often talks excessively

impulsivity

- (g) often blurts out answers before questions have been completed
- (h) often has difficulty awaiting turn
- (i) often interrupts or intrudes on others (e.g. butts into conversations or games)

- B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.
- C. Some impairment from the symptoms is present in two or more settings (e.g. at school [or work] and at home).
- D. There must be clear evidence of clinically significant impairment in social, academic or occupational functioning.
- E. The symptoms to not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder or a Personality Disorder).

The DSM-IV Diagnostic *Code* is based on type as follows:

- 314.01 Attention Deficit/Hyperactivity Disorder, Combined Type:** if both Criteria A1 and A2 are met for the past 6 months
- 314.00 Attention Deficit/Hyperactivity Disorder, Predominantly Inattentive Type:** if Criterion A1 is met but Criterion A2 is not met for the past 6 months
- 314.01 Attention Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type:** if Criterion A2 is met but Criterion A1 is not met for the past 6 months

For clarity, the following table is a cross reference between the symptoms reported by the teachers, parents and the DSM-IV Criteria A:

Teacher Complaint	Parent Complaint	DSM-IV Criteria	Listed Teacher or Parent Comment
1		2b	He never stays in his seat whether he is busy doing work, or listening to the teacher talk.
2		2a	When he does sit, his hands and feet are constantly moving and fidgeting
3		2f	Interrupts and talks non-stop
4		2b	Can't wait his turn. He upsets the other students because he will push them out of the way to get what he wants. This doesn't seem malicious, he just doesn't appear to notice them.
5		2c	In PE, he wont stop running even when they are supposed to. When he does play a game, he cannot work with the others (e.g. never passes the ball)
6		1b,2d	During recess, he interrupts others' activities, plays with them for a while, and then goes on to the next activity.
7		1g	In the classroom, he often loses his materials, assignments or personal belongings.
8		1c	Does not seem to listen when addressed, called upon or for correction. The teachers get the feeling that he doesn't care.
9		1e	Can't organize his tasks. Will get sidetracked very easily.
10		1f	Avoids almost every task except games. Doesn't want to do any homework.
11		1a	When he does do school or homework, he often makes careless mistakes such as not putting his name on assignments.
	1	2e	He doesn't want to go to sleep, he will run around and then finally "collapse" at bed time
	2	1d	Doesn't finish chores. (e.g. will start to make the bed and stop half way through to start something else)
	3	2b,1h	Won't sit still for dinner, sometimes will throw food when told to "sit and eat"

Diagnostic Features and Associated Features

To "qualify" for a diagnosis of Attention Deficit/Hyperactivity Disorder (ADHD), one must display a persistent pattern of inattention and/or hyperactivity impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development. Some of these symptoms must be present before age 7, and some impairment from these symptoms must occur in at least 2 settings. In addition, there must

be clear evidence of interference with developmentally appropriate academic, social or occupational functioning. The problem must not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (APA, 1994).

There are 3 subtypes of ADHD that are listed above in the diagnostic criteria section. The one we are most interested in is the Combined Type. This is a patient that displays serious symptoms of both hyperactivity and inattention. The Predominately Inattentive Type displays less hyperactive symptoms, while the Predominately Hyperactive-Impulsive Type displays mostly hyperactive symptoms and has fewer problems with attention (APA, 1994).

Associated features of the disorder vary as a function of age. These include low self-esteem, mood changes, low frustration tolerance and temper outbursts. These students tend to do poorly in school. The course of the disorder varies considerably. Sometimes ADHD as a child can manifest problems later in adulthood or they may be "outgrown" (APA, 1994).

As shown above Johnny demonstrates enough behaviors to be diagnosed as having ADHD. Johnny meets 9 of the sub-criteria under criterion A1, and 7 of the sub-criteria under criterion A2. He also has had these problems since before 7, and has impairment in both school and home settings. There is also no indication of another disorder (e.g. Pervasive Developmental Disorder) (APA, 1994).

Differential Diagnosis

It is difficult to diagnose ADHD in children at an early age due to problems contrasting these behaviors with "normal" children who also exhibit these as age-appropriate behaviors. These signs are also prevalent with children who have some level of Mental Retardation, therefore, we must determine whether these behaviors are due really to ADHD or a symptom of a more serious problem. Sometimes this disorder also may appear to occur in children who have been placed in an under stimulating environment (e.g. they are very intelligent for their age). We must also differentiate this behavior from oppositional behavior, which may also manifest many similarities (though those with ADHD may develop secondary oppositional attitudes toward such tasks, we must identify the underlying issue) (APA, 1994).

Prevalence, Gender and Specific Cultural Features

ADHD is one of the most common behavior disorders we can see in children. It "is one of the most frequent reasons children are referred to mental health clinics in the United States, accounting for as many as 50% of all child referrals to outpatient mental health clinics." (Frock & Lahey, 1991, p. 163). The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) states, "the prevalence of Attention Deficit/Hyperactivity Disorder is estimated at 3%-5% in school-age children. Data on prevalence in adults and adolescents are limited." (APA, 1994, p. 82). Other studies consistently point to a 5% to

10% proportion of children who have the syndrome, while, some experts believe that it may be as high as 20% (Taylor, 1990). Some evidence exists that the number of children have been increasing (Bender & Mathes, 1995).

Gender data varies quite a bit, and probably needs further attention, yet it seems clear that boys tend to be more prone to ADHD. It is estimated that 5 to 10 times as many boys exhibit this behavior as girls (Hynd et al., 1991). To put some of the above numbers in perspective then, if we have 5% of children with ADHD, and 5 times as many of these are boys, this results in 8% of boys possibly diagnosed ADHD. If we make a less conservative estimate of 20% of children with ADHD, and 10 times as many boys with it, this results in approximately 36% of boys. The overall numbers with ADHD may even be higher since recent studies have shown that girls don't appear as frequently because they are not "as flagrantly active or aggressive as their male counterparts and are thus less likely to be referred for evaluation." (Hynd et al., 1991, p. 178) This means there may be even more undetected cases in girls. This may be quite significant to the teacher who has many students, since the odds are that they will see ADHD kids every year. The earlier version of the DSM (the DSM-III-R) stated that "about one third of the children continue to show signs in adulthood and a significant number of these have also been found to develop Antisocial Personality Disorder" (APA, 1987, p. 51), though this statement is not in the DSM-IV. I have not noted any recent data on cultural variance regarding ADHD.

Etiology

The generally accepted cause or causes of ADHD are mostly physiological in nature. Hind et al. (1991) studied many variants of these. Some suggest genetics such as a problem with chromosomal anomaly like an extra Y chromosome in boys, and in girls the lack of their second X chromosome. Another genetic based disorder, Neurofibromatosis (NF), which is not more prevalent in either sex, may be related (Erk, 1995; Pellegrini & Horvat, 1995). Sugar and/or food additives have long been proposed as a cause of ADHD, but it has recently been shown that there is little or no documented effect on the behavior of ADHD children. There may be some prenatal causes such as prolonged oxygen deprivation, extreme prematurity, intraventricular hemorrhages, and hydrocephalus has been linked to later behavioral problems such as these. Lead poisoning has also been shown to have some relationship (Batshe & Knoff, 1994).

The most common belief is that it is a neurological problem. Information moves through the brain because nerve impulses are transmitted from cell to cell by neurotransmitters. Neurotransmitters cause some nerve cells to fire (called excitation) while inhibiting others from firing. When these are not working properly, various behaviors may result. Current research is focused on the portions of the brain that may be related to ADHD. Lessened brain activity also has been related to ADHD (Erk, 1995) The present evidence suggests that while it cannot be concluded that all children with ADHD have observable evidence of neurological dysfunction, the accumulation of the data from the genetic, biochemical, neurobehavioral, and neuroimaging studies strongly suggest that there is a neurological cause in most children (Hynd, Hern, Voeller & Marshall, 1991).

Still, sociological and psychological factors are creating some doubt in the thought that all ADHD causes are biological. "...ADHD are as much a result of parental pressures and political necessity as of solid scholarship on organic deficiencies and/or assessment techniques..." (Bender & McLaughlin, 1994) Other studies have shown relationships between more sociocultural and psychological factors and development of ADHD. Behavioral studies of parents of children with ADHD revealed that a family history of the disorder is four times as common in parents of children with ADHD than otherwise (Hynd, Hern, Voeller & Marshall, 1991).

Treatment

ADHD is a very complicated problem to treat, with no straightforward "solution." It is treated both by medical and psychological methods. The prescription of psychostimulant medications is the most frequent treatment for ADHD, with approximately 750,000 children receiving these drugs annually. It may seem paradoxical that the hyper children are prescribed stimulants, but these particular drugs have been found to stimulate the parts of the brain that seem to be related to the disorder. The three most commonly employed are Ritalin, Dexedrine, and Cylert (listed by brand names) with Ritalin (methylphenidate) accounting for more than 90% of these. About 70 to 80% of the children treated with psychostimulants respond positively, while the remainder require alternative medications such as antidepressants (DuPaul, Barkley & McMurray, 1991). When the inattention and motor over activity associated with ADHD are diminished due to medication, learning difficulties are equally attenuated (Hynd et al., 1991).

Even though serious cases often require medication, this is not the only way to work with these children. Behavioral methods have been shown to work with kids who may otherwise be able to absorb little information. One method is to work with adjusting the environment the student perceives. Some of these require modification of the class environment such as seating or standing arrangements or characteristics of the task (e.g., do activities along with other fun games, instead of repetitive, boring tasks). More easily applied strategies are also used. Contingent teacher attention constitutes the most universally employed set of classroom management techniques. Frequent verbal feedback (both positive and negative), and non-verbal feedback such as frowns, smiles and pats of approval are frequently used. Classroom token economies where tokens or points are awarded to be exchanged later for prizes, activities, or privileges, have been well documented as being excellent ways to motivate youngsters (ADHD and non-ADHD alike). These may or may not include loss of the prizes, activities, or privileges when the student demonstrates inappropriate behavior. A way to get parents involved is to agree on a checklist of behavioral goals that the instructor can send home with the child to be signed by the parent. Then the parent can provide appropriate reinforcement at home. Another method is the time-out period where a student is removed from the group activity for a period of time. These environmental modifications and reinforcements have been shown to be effective (Abramowitz and O'Leary, 1991).

Cognitive behavioral interventions for ADHD teach students how to be their own managers of behavior. These are broken down into two categories that teach self-monitoring and self-reinforcement, and those that involve cognitive skills such as self-

instruction and problem solving. Self monitoring strategies teach children to observe their own behavior while self-reinforcement involves teaching children to reward themselves based on the self-monitoring. These are taught at the end of a token economy strategy to promote maintenance of the idea (could also be at the end of a session where the student needs to go home and continue to behave). With the self-instruction method, the student is taught metacognitive skills to follow a series of steps in approaching a task (such as repeating the instructions back, verbalizing how they may attempt the task, thinking about the consequences of the approach, deciding how to proceed, performing the task, reflecting upon their performance, and evaluating their own performance of the task). Then these are changed to covert self-instructions through rehearsal. These may provide promise that the student may learn to control their behavior on their own (Abramowitz and O'Leary, 1991).

Prognosis

Most symptoms can be controlled through one of the above therapies, and usually these symptoms attenuate during late adolescence and adulthood. A minority continue to have symptoms into full adulthood, though some only partially (in which case a diagnosis of "in Partial Remission" is appropriate). (APA, 1994)

Summary and Conclusions

Johnny certainly meets the requirements of ADHD and will require some form of treatment. Most commonly the treatment of a serious case such as this will begin with medication. The prognosis is good that his behavior will improve with this treatment and it is also likely that the symptoms will lessen as he approaches late adolescence.

We have discussed a case study, diagnosis, cause, and treatment of Attention Deficit/Hyperactivity disorder. Our case study provided an example of a fairly typical situation. This occurs in as many as 5% of children today. While the diagnosis criteria are straightforward, there are difficulties in diagnosis due to the symptoms also being normal child behavior (if displayed to a lesser degree) as well as similar manifestations due to other disorders. The most commonly suspected cause of this disorder is biological, though there are many other causal factors. Based on this, drugs are the most commonly used treatment, though behavioral approaches are getting more attention. With an understanding of ADHD and its treatments we can apply the information, to varying degrees, to severe cases or, in the case of the non-medication treatments, to any child who is simply being hyper, inattentive, or disruptive. This is an extremely important disorder for the counselor to understand because of its prevalence, diagnosis issues, and public visibility. Working with these children is very challenging. It requires quite a bit of effort on the part of the counselor, but with a clear perception of the problem, I feel that efforts will be fruitful, both for the counselor and for the client.

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