

PDH Academy

ADHD

(Attention-Deficit/Hyperactivity Disorder)

2 Hours

(Course #9797)

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Final Exam

1. Pertaining to the causation and diagnosis of ADHD, which statement is most true?
 - A. Biological tests can assess for the presence of ADHD
 - B. Being born preterm may play a role in the development of ADHD
 - C. ADHD is an easy diagnosis
 - D. Most theorists agree that ADHD is a result of early life social deprivation.

2. Stimulants include the following
 - A. Methylphenidate
 - B. Amphetamine
 - C. Pemoline
 - D. All of the above.

3. What should generally be delivered first as a treatment for ADHD?
 - A. Behavioral parent Training
 - B. Medication
 - C. Sugar-free diet
 - D. Meditation

4. What is **NOT** a common side effect of stimulant medication?
 - A. Appetite suppression
 - B. Growth retardation
 - C. Difficulty sleeping
 - D. Weight gain

5. What are recommended psychosocial treatments according to the research for ADHD?
 - A. Individual CBT for the child
 - B. Parent behavioral training
 - C. Sandtray therapy
 - D. Wilderness camps

6. What is **NOT** an element of behavioral parent training:
 - A. punishment for non-desirous behavior
 - B. ignoring for non-desirous behavior
 - C. exploring early attachment patterns
 - D. using rewards for certain number of reinforcements

7. What are biological reasons for ADHD developing?
- A. Vaccines
 - B. Genetics
 - C. Sugar
 - D. Noise
8. What are reasons for marital strain in parents with children with ADHD?
- A. Because fathers may become too harsh, mothers often take sole responsibility for parenting and are therefore exhausted and resentful.
 - B. Fathers may have ADHD themselves.
 - C. The child inserts himself into the marital relationship, wanting the attention from the mother.
 - D. All of the above.
9. What is the personal impact on parents of ADHD in children?
- A. A variety of painful emotions due to managing their children's behavior.
 - B. Their occupational functioning is disrupted to the point of having to quit jobs in some cases.
 - C. Divorce is more common among parents of children with ADHD.
 - D. All of the above.
10. What are some of the psychological factors that pose risk for recovery and adjustment for children diagnosed with ADHD?
- A. Severe ADHD
 - B. Comorbid Oppositional Defiant Disorder
 - C. Child's level of functioning and adaptation
 - D. All of the above
11. Pertaining to the biological causation and diagnosis of ADHD, which statement is **NOT** true?
- A. Biological tests can assess for the presence of ADHD
 - B. Being born preterm may play a role in the development of ADHD.
 - C. Cigarette smoking while pregnant may play a role
 - D. Exposure to lead may increase the risk
12. Which of the following is a risk influence specific to the course of ADHD:
- A. Being an only child
 - B. Having two parents in the household
 - C. Single parenting
 - D. Having older siblings

13. What is **NOT** part of reaching an ADHD diagnosis?
- A. Rating scales completed by teachers
 - B. Parent interview
 - C. Physiological testing that determines the presence of ADHD.
 - D. Behavioral observations of the child
14. What is the empirically supported psychosocial treatment(s) for ADHD?
- A. Play therapy
 - B. Psychodynamic therapy
 - C. Solution-focused therapy
 - D. Behavioral parent training
15. What is true about how generally parents react to the diagnosis of ADHD in their children.
- A. They tend to be relieved almost immediately that there is a label for what their children are like.
 - B. The acceptance of the diagnosis is best described as a long process rather than a discrete event.
 - C. They always reject the label.
 - D. They fully understand the biological theories of ADHD.

Course Abstract

This course is for social workers to understand what ADHD is, how to diagnose it, the biopsychosocial influences, and evidence-based treatment. A critical perspective on ADHD concludes the course.

Learning Objectives:

1. The student will understand the role of social workers in screening, assessing, referrals, and intervention for ADHD, becoming familiar with the DSM 5 criteria and key features in children, adolescents, and adults.
2. The student will understand the relevance of the common mental health disorder ADHD for social workers and its influence, as part of a bio-psycho-framework, on other social problems to which social work is committed.
3. The student will understand the epidemiological nature of ADHD.
4. The student will become familiar with a biopsychosocial framework for understanding the causation for ADHD and factors associated with recovery.
5. The student will be knowledgeable about the medications used for treatment and their advantages and disadvantages.
6. The student will be knowledgeable about the use of parent management training for youth with ADHD.
7. The student will understand some of the controversies attached to the medical diagnosis of ADHD and its treatment by medication.

ADHD

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) is the preeminent diagnostic classification system among clinical practitioners in this country. Knowledge of the *DSM* is critical so that social workers can converse with other mental health professionals and are eligible to receive reimbursement for services they deliver. The *DSM* catalogs, codes, and describes the various mental disorders recognized by the American Psychiatric Association (APA). The manual was first published in 1952 and has undergone continual revisions during the past 50 years. The latest version is *DSM 5*, published in 2013 (APA, 2013). Much of the terminology from the *DSM* has been adopted by mental health professionals from all fields as a common language with which to discuss disorders.

DSM Criteria

Attention-deficit/hyperactivity disorder (ADHD) is characterized by a persistent pattern (six months or more) of *inattention* and/or *hyperactivity* and *impulsive behavior* that is more frequent and severe than what is typically observed in others at a comparable developmental level (APA, 2013). There are three subtypes of the disorder:

- 1) an inattentive type only
- 2) a hyperactive and impulsive type only
- 3) a combined type where there are significant symptoms for both inattention and hyperactivity/impulsivity.

The DSM specifies that to meet criteria in any of these domains, six or more symptoms are required to be present (5 or more if the subject is 17 years of age or older). For

inattention, the following behaviors occur frequently :

1. careless errors and inability to pay attention to detail
2. difficulty sustaining attention
3. fails to listen
4. inability to follow through on instructions and finish schoolwork, chores, or duties
5. difficulty organizing tasks and activities
6. resistance to tasks that involve sustained mental effort
7. loses items frequently
8. easily distracted by extraneous stimuli and for older adolescents and adults, this may include wandering thoughts
9. often forgets

For hyperactivity and impulsivity, these are the following behaviors, performed on a frequent basis:

1. Fidgeting
2. Getting up when it's inappropriate (school)
3. Runs or climbs when inappropriate
4. Unable to play quietly
5. Is wound up
6. Excessive talking
7. Blurting out in class

8. Difficulty waiting turn
9. Interrupts or intrudes on others

DSM has updated the criteria so they are more relevant for adults. In previous editions, they tended to be more geared toward children and did not address adult functioning. The DSM 5 has also changed the age of onset to twelve rather than seven mainly in response to adults having difficulty retrospectively recalling childhood problems with ADHD.

Along with DSM defined symptoms, anger, irritability, and aggression are common in children with ADHD, even though they are not part of the criteria. Some children also meet the criteria for Oppositional Defiant Disorder, which is discussed below as a common comorbid disorder. However, some of the anger shown can be attributed to aspects of ADHD itself, which can include poor emotional regulation and frustration tolerance because of inability to meet expectations and complete tasks. Seymour, Macatee, and Chronis-Tuscano (2016) found that low frustration tolerance is directly linked to ADHD and not better accounted for by Oppositional Defiant Disorder, a disorder in youth that is marked by anger and defiance.

Frustration and aggression in children with ADHD can also arise from difficulty managing angry impulses. Further evidence for the role of impulsive aggression is that treatment with stimulants can reduce anger-related behaviors (Pappadopulos et al., 2006).

Impairment

Any DSM disorder has to meet both symptom criteria and impairment. For children with ADHD, impairment is typically in the arenas of academic underperformance and social relationships. Academic impairment as the result of difficulty focusing and concentrating, as well as poor organizational skills, is a common outcome for youth with ADHD. Problems in school may be associated particularly with the inattentive symptoms, according to a review by Dvorsky, Langberg, Evans, & Becker (2016).

The majority of children with ADHD experience peer relationship difficulties (between 50 to 70%, according to a review by Antshel, Macias & Barkley, 2009). These challenges include an absence of mutual friendships, peer rejection, and bullying. The primary social skills deficits experienced by youth with ADHD can be categorized into three broad domains (see Wehmeier, Schacht, & Barkley, 2010 for review):

- 1) disruptive/inappropriate social behaviors, which include impulsivity, intrusiveness, hostility, and lacking in appropriate social skills, such as sharing, cooperation, and turn taking.
- 2) sociocognitive and social problem-solving deficits, which include inadequate perspective-taking and problem-solving.
- 3) emotion regulation difficulties, which include excessive expression of negative emotions, decreased tolerance for frustration, and reduced empathy.

REVIEW QUESTIONS:

1. Which of the following is **not** a symptom of ADHD as defined in the DSM?
 - A. disorganization

- B. distractibility
- C. inability to pay attention
- D. talking excessively
- E. irritability**

2. Which of the following is a symptom of ADHD according to the DSM?

- A. Frustration intolerance
- B. Irritability
- C. Impaired peer relationships
- D. Poor grades
- E. None of these are part of the DSM criteria**

Brandon, a white 10 year old, displays the following symptoms: if effort is involved in subjects he is not interested in, like reading, he will find any excuses not to do it, will procrastinate, will become argumentative when he is prompted to do it, and is unable to do it for more than a few minutes at a time without moving around. His teacher has to remind him many times a day to stop talking in class so she can lecture and students can center on their work. He blurts out answers to questions she asks in class before others can answer. He complains about assignments at school and the lectures being “boring” and the reason why he won’t listen and do assignments. In class, he is unable to sit still and fidgets constantly. He leaves the classroom frequently for bathroom and water breaks with permission. He is active at home, always wanting his mother to arrange playdates with other boys. If not, she plays ball and games with him to keep him busy instead. He is bright in math and catches on quickly, but if effort is involved in learning a

concept, he will decide that he can't do it and "is not smart." He often loses and forgets items, such as homework that needs doing, homework that needs turning in, shoes, clothes, and sports equipment. His room is messy, as is his backpack and desk where wrappers, papers, and books are crammed in, bent and folded.

Based on the behaviors described here, Brandon should be diagnosed with:

- A. No diagnosis of ADHD.
- B. Inattentive type.
- C. Hyperactive type.
- D. Combined type.

For inattention type, six of the symptoms must be present to meet criteria:

1. Challenge to keep attention: Brandon claims that the reason he doesn't listen and pay attention is because the work is boring.
2. Fails to listen: He won't listen in school when he thinks things are boring
3. Inability to follow through on instructions and fails to finish schoolwork, chores, or duties: Brandon fails to finish assignments he isn't interested in and quickly gives up if it is too difficult
4. Resistance to tasks that involve sustained mental effort: if effort is involved in subjects he is not interested in, Brandon will become resistant to doing it. If effort is involved in learning a concept, he will decide that he can't do it and "is not smart."
5. Loses items frequently: He often loses items

6. Often forgets: He often forgets items

For hyperactivity and impulsivity type, six of the symptoms must be present to meet criteria:

1. Fidgeting: In class, he is unable to sit still and fidgets constantly.
2. Getting up when it's inappropriate (school): He leaves the classroom frequently for bathroom and water breaks with permission.
3. Unable to play quietly: He is active at home, always wanting his mother to arrange playdates with other boys. If not, she plays ball and games with him to keep him busy instead.
4. Is wound up: Unable to sit still at school, and constantly needs to be active at home
5. Excessive talking: His teacher has to remind him many times a day to stop talking in class so she can lecture and students can center on their work.
6. Blurts out answers in class.

Brandon meets 6 out of 9 symptoms for inattentive type, and 6 out of 9 symptoms for hyperactivity and impulsivity type; therefore, he meets criteria for combined type.

Sasha, a 9 year old Russian adoptee, to an American single-parent, touches everything in every store she goes into, has an angry tone when her mother asks her to do anything like put her dishes in the dishwasher, has to be constantly amused or feels bored, and wants to

be playing with kids all the time. She prefers playing with boys because they play rough and are interested in the same kind of games she is. She has broken six bones since she was young by taking risks such as climbing trees and skating recklessly. In the therapist's office, they have to play ball or play games otherwise she roams the office or puts herself underneath the couch.

Based on the behaviors described here, Sarah should be diagnosed with:

- A. No diagnosis of ADHD.
- B. Inattentive type.
- C. Hyperactive/Impulsive type.
- D. Combined type.

For inattention type, six of the symptoms must be present to meet criteria:

- 1. Challenge to keep attention: Sasha has to be constantly amused or feels bored

For hyperactivity and impulsivity type, six of the symptoms must be present to meet criteria:

- 1. Fidgeting: She touches everything in every store she goes into
- 2. Runs or climbs in inappropriate situations: Sasha takes risks such as climbing trees and skating recklessly
- 3. Unable to play quietly: She wants to be playing with kids all the time
- 4. Is wound up: Sasha prefers playing with boys because they play rough

5. Leaves seat when remaining seated is expected: She roams the therapist's office or puts herself underneath the couch

Sasha meets 1 out of 9 symptoms for inattentive type, and 5 out of 9 symptoms for hyperactivity and impulsivity type; therefore, she does not meet criteria for ADHD.

Relevance for Social Work

Social workers are the primary deliverers of mental health services in the U.S.; therefore, any mental health setting -- outpatient, residential, or inpatient hospital -- is bound to have clients that have the diagnosable condition of ADHD. School social workers, in particular, may be involved in identifying a child for services, play a role in the evaluation process, or may be required to coordinate or deliver services for such children. In addition to schools, many children and adolescents are identified for the first time as in need of mental health services when they come to the attention of child welfare (or another social service system) or the juvenile criminal justice system.

As with youth, adults who end up as perpetrators of domestic violence or other criminal charges should be screened for ADHD (Buitelaar, Posthumus, & Buitelaar, 2015). Interestingly, victims of domestic violence may also have a greater propensity for the disorder, according to a review by Wymbs, Dawson, Egan, and Sacchetti (2016); therefore, this population may need to be screened as well. Finally, screening is suggested for people seeking services for substance use disorders as impulsivity may have contributed, and substances may have been used to medicate hyperactive or

inattentive symptoms. Knowledge of ADHD is critical for all these types of settings and where assessment, referral and information, and service delivery are offered by social workers.

Prevalence

In 2011, 6.4 million children in the United States ages 4–17 years had a diagnosis of ADHD. The rate of diagnosis is 11% of youth, and it has increased throughout in recent years—from 7.8% in 2003, to 9.5% in 2007, and to 11.0% in 2011 (Centers for Disease Control and Prevention [CDC], 2015). This represents an increase of 3% per year since 1997. Despite the increase according to the CDC, a systematic review of studies indicated that worldwide, the prevalence of ADHD has not increased in the past three decades (Polanczyk, Willcutt, Salum, Kieling, & Rohde, 2014).

The lifetime prevalence rate of ADHD in adults is 8.1% according to the National Comorbidity Study (Kessler, Berglund, Demler, Jin, & Walters, 2005). A meta-analysis of prevalence studies of adult ADHD ($n = 6$ studies) found a pooled rate of 2.5% (Simon, Czobor, Bálint, Mészáros, & Bitter, 2009). Although this rate was lower than the Kessler et al. (2005) finding, the authors believed that the difficulty of applying *DSM* criteria for ADHD to adults resulted in an underestimation of prevalence rates.

Ethnic Groups

Although their incidence of ADHD is similar to rates found in Caucasian populations, fewer African Americans are diagnosed and treated (Bailey & Owens,

2005). Possible barriers relate to both the healthcare system and to lack of knowledge among parents. Barriers associated with the healthcare system involve:

- 1) lack of culturally competent healthcare providers
- 2) racial stereotyping by professionals
- 3) the failure of clinicians to evaluate the child in multiple settings before diagnosis.
- 4) Parents lack education about the symptoms, treatment, and the consequences of untreated ADHD.

Few population prevalence studies of ADHD have been done with people of Hispanic origin. One estimate by the National Center for Health Statistics reported a prevalence of 3.3% in Hispanics and 6.5% in Caucasians (Bloom & Dey, 2006). The incidence of ADHD may truly be lower in Hispanic children, but under-diagnosis may also explain the differential rates (Rothe, 2005). Barriers to differences in rates include:

- 1) language barriers that interfere with the ability to report ADHD symptoms
- 2) the family's degree of acculturation (less acculturated parents may not recognize symptoms of ADHD)
- 3) different developmental expectations by Latino parents
- 4) physician bias that may cause dismissal of concerns regarding symptoms in the Hispanic population.

Gender

Boys are more likely to be diagnosed than girls (13.2% versus 5.6%) at about a 2.5:1 ratio (CDC, 2013) and boys may have a greater genetic liability for the disorder (Derks,

Dolan, Hudziak, Neale, & Boomsma, 2007). Girls may differ from boys in terms of presentation. Fewer girls tend to be diagnosed with the disorder, even controlling for the fact that the disruptive behavior of boys may more often bring them to the attention of treatment providers. Females have a lower base level of inattentiveness and hyperactivity than their male counterparts, and thus they have to deviate much further from girls without symptoms in order to be diagnosed (Arnett, Pennington, Willcutt, DeFries, & Olson, 2015). Further, inattentiveness is the most prominent feature in girls rather than hyperactivity and impulsivity which brings boys to the attention of professionals (Monuteaux, Mick, Faraone, & Biederman, 2010).

Attention should be paid to appropriate identification and treatment in girls with ADHD, however, because substantial risk may be associated with ADHD in girls. In comparison to girls without ADHD females of the same age but who had been diagnosed five years earlier were compared (Hinshaw, Owens, Sami, & Fargeon, 2006). Those with ADHD had significantly more impairment across all the symptom domains, including externalizing, internalizing, substance-use disorders, eating problems, peer relations, and academic performance. Girls diagnosed with ADHD in childhood seem at particular risk for anxiety and depression by the time they reach adolescence (Biederman, Ball, et al., 2008; Owens, Hinshaw, Lee, & Lahey, 2009). They are also more at risk for future diagnosis of conduct disorder in adolescence (Monuteaux, Faraone, Gross, & Biederman, 2007). These researchers also found that the girls with ADHD had more maltreatment (mostly sexual abuse and neglect) when they were younger than the comparison girls (Briscoe-Smith & Hinshaw, 2006). It is uncertain whether the abuse was a causal factor

in the ADHD. These findings indicate the seriousness of ADHD symptoms in girls and the importance of proper diagnosis and treatment. At the same time, girls did better than boys in the MTA study over the 36-month period in which they were followed after undergoing intervention for 14 months (Jensen et al., 2007). This is encouraging, as girls may perform at least as well as boys when they receive treatment.

REVIEW QUESTIONS:

1. Rates of under-diagnosis in children from minority backgrounds include:
 - A. different parental expectations for behavior
 - B. actual differing rates
 - C. lack of cultural sensitivity by providers
 - D. all of the above**

2. What are reasons that ADHD might be diagnosed more highly in boys than in girls?
 - A. The rates might truly be higher in males.
 - B. There may be higher genetic risk in males
 - C. Females have a lower base level of inattentiveness and hyperactivity than their male counterparts, and thus they have to deviate much further from girls without symptoms in order to be diagnosed
 - D. All of the above.**

3. How does ADHD present in girls?
 - A. Inattentive symptoms may be prominent

- B. Females have a lower base level of inattentiveness and hyperactivity than their male counterparts, and thus they have to deviate much further from girls without symptoms in order to be diagnosed
- C. Females may face serious consequences if they are not treated
- D. Females may do at least as well through treatment, if not better than boys.
- E. All of the above.**

Course

The majority of youth (two-thirds) who are diagnosed with ADHD in childhood will continue to meet criteria into adolescence (Wolraich, Bickman, Lambert, Simmons, & Doffing, 2005). Despite the substantial persistence of ADHD in adolescence and its serious consequences, most studies on ADHD treatment outcome research have been conducted on children (Chan, Fogler, & Hammerness, 2016). About a third (36%) of childhood cases continue into adulthood, with 8.1% of adults meeting diagnostic criteria, according to the National Co-Morbidity Replication Study (Kessler et al., 2005).

Adults with ADHD tend to have more problems in the work and social arenas. In a study following children with ADHD into young adulthood, a third (32%) had failed to complete high school, and far fewer were in college compared to the “normal” control group (Barkley, 2016 for a review). In addition, young adults with hyperactivity had fewer friends and had more difficulty keeping friends. Sexual risk-taking, in terms of number of partners and unprotected sex, was also indicated. Moreover, adults with ADHD show impaired work performance, and this effect is particularly evident among

blue-collar workers (Kessler, Adler, et al., 2005). People with ADHD have more car accidents, citations, and speeding tickets than people without ADHD, although they do not perceive themselves as poor drivers (Knouse, Bagwell, Barkley, & Murphy, 2005).

A systematic review of 351 studies compared people with ADHD as adults who were treated versus those who were not treated and people not diagnosed with ADHD (Shaw et al., 2012). When studies were pooled, the findings indicated that lack of treatment was associated with worse long-term results in all areas compared to the receipt of treatment. Participants who were treated improved in 72% of all outcome categories over those who were not treated, although they still did not tend to function within “normal” levels. The outcomes most responsive to treatment were obesity and driving; the least responsive were drug use/addictive behavior, antisocial behavior, services use, and occupation. Therefore, it appears that treatment in childhood is important for improving the long-term course of ADHD, but it still may not help people attain a “normal” level of functioning in all areas.

A recent, population-based, longitudinal study also found that the odds of having an alcohol or drug-dependent disorder was increased in adulthood if a child had been diagnosed with ADHD (Levy et al., 2014). Finally, ADHD is a risk factor for self-harm (Allely, 2014) and suicidality, including ideation and attempts (Impey, 2011).

REVIEW QUESTION:

1. What is NOT true about some of the outcomes of adults who were diagnosed with ADHD in childhood?

- A. **The vast majority of children diagnosed with ADHD outgrow it by the time they reach adolescence.**
- B. Adults who were treated for ADHD as children do better than adults who had not been treated for ADHD.
- C. Adults who were treated as children for ADHD do as well as people who were never diagnosed with ADHD.
- D. None of the above

Comorbidity

The majority of people with ADHD have at least one other disorder (Jensen et al., 2007). The presence of more than one disorder is called *comorbidity*. The most frequent co-occurring diagnosis is one of the disruptive disorders – namely Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD) (see Wolraich et al., 2005, for a review). In the MTA study, almost a third (29.5%) were diagnosed with ADHD and either ODD or CD. Substantial comorbidity also exists between ADHD and bipolar and depressive disorders (0–72%) (Carlson & Meyer, 2009), anxiety disorders (25%), and the learning disorders (25–70%) (Tannock & Brown, 2009).

Having comorbid ODD or CD, in particular, puts a child at risk for continued disorders in adulthood. For example, ODD represents risk for ODD and depression in early adulthood (Biederman, Petty, et al., 2008). Comorbid CD puts a child at risk for substance use disorders, bipolar disorder, and smoking in early adulthood.

REVIEW QUESTION:

1. In terms of comorbidity, what is true?
 - A. Most children with ADHD have another disorder as well.
 - B. The most common co-morbid disorders are the disruptive disorders.
 - C. The disruptive disorders when present along with ADHD increase risk for disorders in young adulthood.
 - D. A, B, and C**

Assessment

Typically, a social worker may play various roles in terms of diagnosis, although it is not a diagnosis that is made solely by social workers usually. Social workers may first notice symptoms in children to determine if further assessment is needed. Social workers may also play a role in a team to provide an evaluation to determine if a diagnosis is warranted. Common roles are to provide interviews of the child and parents and write a social history and assessment.

ADHD generally begins before the age of four or five, although difficulties abound in diagnosing preschool-age children (DuPaul & Kern, 2011). For instance, valid and reliable instruments for assessing ADHD are lacking. Caution must also be exercised in diagnosing ADHD in preschool because the child may be reacting to a difficult environment, displaying anxiety symptoms, or experiencing other problems with emotional regulation. As a result, most children are not diagnosed until elementary school.

Assessment at the school-age stage, recognizing that no definitive biological or neurological test establishes the diagnosis, includes several components (American Academy of Pediatrics, 2011; Barkley, 2015):

- A physical examination and a review of health records
- Interviews with the child, parents, teachers, and any other significant persons
- Assessment for other mental health conditions. Problems related to trauma, stress, depression, and anxiety should be ruled out. These are discussed below under differential diagnosis.
- Behavioral observations of the child and of parent–child interactions
- Rating scales completed by parents and teachers can provide useful information (See Table 1.)

Table 1. Youth Screening and Assessment Tools

Assessment Tool	Description	Formats Available
Connors Ratings Scales–Revised (Conners, 1997)	Popular scale with long history in the evaluation of ADHD to include <i>DSM-IV</i> criteria for youth, ages 3–17	The full forms of all reporter versions provide comprehensive evaluation, whereas the abbreviated forms aid screening or treatment monitoring: Parent (80-item and 27-item versions), teacher (59-item and 28-item versions), and adolescent

		(87-item and 27-item versions)
The Swanson, Nolan, and Pelham-IV Questionnaire (SNAP-IV) (Swanson, 1992; Swanson et al., 2001)	Long history in ADHD evaluation, particularly in research; first developed for use with <i>DSM-III</i> and updated with each <i>DSM</i> revision	<p>Parent and teacher versions for children ages 5–11</p> <p>Ninety items (full version, takes 20–30 minutes to complete)</p> <p>31 items (short version, takes 5–10 minutes)</p> <p>Available online</p>
Brown Attention-Deficit Disorder Scales for Children and Adolescents (BADDS) (Brown, 2001)	Unlike scales that focus on ADHD symptoms, the BADDS is said to measure deficits in executive functioning underlying ADHD	<p>Separate versions for youths 3–7, 8–12, and 12–18 years are worded to indicate developmentally relevant manifestations of ADHD.</p> <p>For ages 3–7, separate parent and teacher forms are available (44 items).</p> <p>For ages 8–12, there are separate versions for parent, teacher, and youth self-report (50 items).</p> <p>The adolescent version can be administered to the adolescent and/or the parent (40 items)</p> <p>Takes 10–15 minutes to administer</p>

Source: Information for tools comprised from Hunsley & Mash (2008); Rapport, Timko, & Wolfe (2005); Smith, Barkley, & Shapiro (2007).

It must be noted that children tend to underreport their symptoms and present themselves as performing much better than they do (Pelham, Fabiano, & Massetti, 2005). In addition, teachers are usually the first people (followed by parents) to suggest that children be evaluated for ADHD (Sax & Kautz, 2003), and their judgements of child symptoms tend to be valid (Mannuzza, Klein, & Moulton, 2002).

The social worker can assume primary responsibility for certain aspects of the assessment process. These include clinical interviews with the child and parent, assessing parent–child interactions, interviewing teachers, and administering measures.

The social worker can also advise parents about the assessment process and the child study process in the school districts in which they work. The child study process varies considerably from state to state and even within districts of the same state.

(Information is typically available on state education websites.) The social worker should be aware that any social worker can submit in writing to a school system that he or she believes a child study should be done, and the school can sometimes become involved in that way.

One point the social worker can be aware of is that children who are young for their class are sometimes unfairly labeled with ADHD when it simply might be maturity in comparison to peers. A study of 937,000 Canadian children indicated that boys who were young for their grade were 30% more likely to be diagnosed with ADHD and 41%

more likely to be prescribed medication (Morrow et al., 2012). The risk was even higher for girls, who were 70% more likely to get diagnosed, and 77% more likely to be medicated. Therefore, social workers should routinely ask children and their parents how old children are in relation to their same-grade peers to see if it might be immaturity, not ADHD, that is the reason for the appearance of symptoms.

Regarding diagnosis in adults, the following components are involved (American Academy of Child and Adolescent Psychiatry, 2002):

- A clinical interview, with discussion of ADHD symptoms present in childhood
- History taking of drug and alcohol use, because ADHD can be comorbid with substance abuse and dependence
- Information from collateral sources (parents, significant others), who may be more accurate reporters of symptoms
- A medical history and physical examination to rule out physical conditions

Completion of a screening instrument for assessing ADHD in adults (See Table 2.)

Table 2. Adult screening and assessment

Assessment Tool	Description	Formats Available
Adult ADHD Self-report Scale (ASRS) (Kessler et	This symptom checklist is an 18-item instrument based on symptoms identified by the DSM-IV	The symptom checklist is an 18 item instrument There is also a smaller version with six items to

al., 2005)		<p>be used for screening purposes</p> <p>There are other versions for non-English-speaking persons</p>
<p>Conners' Adult ADHD Rating Scales (CAARS)</p> <p>(Conners, Erhardt, & Sparrow, 1999)</p>	<p>Sixty-six items loading on four dimensions: (a) inattention/memory problems, (b) hyperactivity/restlessness, (c) impulsivity/emotional lability, and (d) problems with self-concept</p>	<p>Sixty-six items version</p> <p>Shorter, 26-item version is available</p> <p>30-item screening version also available</p>

Source: Knouse & Safren (2010)

Parents' Coming to Terms with the Diagnosis

Despite the guidelines provided here and if a diagnosis of ADHD is made, the acceptance of a diagnosis by a parent is often a long process, involving a series of stages. A meta-synthesis was also conducted on parenting decisions about treating their children with ADHD medication (Ahmed, McCaffery, & Aslani, 2013). Eleven studies involving 335 parents of children were located, and four major themes emerged: confronting the diagnosis, external influences, apprehension regarding therapy, and experience with the healthcare system. Confronting the diagnosis involved coming to terms with the diagnosis itself, often after a period of denial and skepticism about the validity of the

disorder, especially considering sensationalized media reports and the brief nature of the initial evaluation that led to a diagnosis.

In the Corcoran et al. (2016) meta-synthesis, parents struggled to understand their children's behavior, often seeing problems from a very early age. A biomedical explanation of ADHD "...was seen as a way of explaining the child's behavior, and the feelings of guilt and frustration were replaced with a sense of relief" (Moen, Hall-Lord, & Hedelin, 2011, p. 450). However, parents' understanding of the biomedical mechanisms for ADHD was often sketchy and superficial.

Many parents shifted their attributions of the reasons for their children's behaviors, from being ones they *won't* control to ones they *can't* control. Roosa (2003) summarized her participant responses as follows:

Instead of being a child whose difficulties are caused by willfulness, defiance, or parenting mistakes, he or she comes to be seen as a child who is neurologically disabled, whose behavior is mostly or partially determined by his or her biology...This new understanding of the child's behavior caused most of these parents to change many specific things about the way they manage difficult behaviors. To begin with, most parents modified their expectations of their child...Once they set up expectations that were realistic for the individual child, their child's ability to achieve success was enhanced and the parents' frustration at the child was diminished (p. 183).

However, parents still struggled to differentiate the lines -- between "normal"

childhood behavior, particularly “boy behavior,” and ADHD behavior, between a child’s personality and ADHD. “Parents continually spoke of trying to understand and make sense of their sons’ ADHD” (McIntyre & Hennessy, 2012, p. 71). “Because there were no biological markers making diagnosis assured, and because ADHD is so varied in its presentation, making sense of the disorder was an ongoing activity” (Kendall, 1998, p. 844).

Some parents felt stigma from other people’s understanding of what ADHD was. Parents described that people thought ADHD was a convenient label to excuse “bad parenting.” The “invisible nature” of ADHD was also seen as a barrier to people’s understanding (Wilder, Koro-Ljungberg, & Bussing, 2009). In Funes de Hernandez (2005), a mother said, “Saying your child has ADHD is a stigma because people are saying it’s just a cop out to excuse his behavior. It’s hard to accept that your child sometimes can’t help what he’s doing. You can see a physical disability like a broken leg but it’s hard to accept a child with a disability in the brain” (p. 85).

An implication from these findings is to discuss with parents the history of how it became apparent that ADHD was the appropriate diagnosis for their children’s behavior (and if indeed they believe that it is the correct diagnosis). The history of when they started noticing signs of “something wrong” and if other people noted problems, as well, could also be a topic of exploration. Parents’ understanding of what ADHD is and its causes could further be explored, offering any necessary clarification in the process. Additionally, the meaning of an ADHD diagnosis for parents’ perceptions in terms of their own views and that of others should be discussed.

REVIEW QUESTIONS:

1. What is NOT part of reaching an ADHD diagnosis?
 - A. Teacher rating forms.
 - B. Parent interview
 - C. Child interview
 - D. Ruling out any medical conditions.
 - E. Physiological testing for the presence of ADHD.

2. What is NOT a recommended part of assessment for ADHD?
 - A. Parent interviews
 - B. Child interviews
 - C. Teacher reports
 - D. Brain imaging
 - E. None of the above

3. Which informant tends to present that performance in various domains – academic, peer, family – is much better than it actually is?
 - A. Parents
 - B. Teachers
 - C. Child
 - D. Principal of the school
 - E. None of the above

4. Which other diagnoses need to be ruled out for a valid assessment of ADHD?

- A. Post-traumatic stress disorder
 - B. Anxiety
 - C. Autism
 - D. A disruptive behavior disorder – Oppositional Defiant Disorder or Conduct Disorder
 - E. All of the above
5. What is NOT true about parents and their reception to their children being diagnosed with ADHD?
- A. Many noticed early problems with their children but didn't know what was wrong.
 - B. Parents tended to have immediate relief in finding out that their children's behaviors could be described as a condition called ADHD.
 - C. It tended to be a long process for figuring out the diagnosis and parents accepting it.
 - D. Parents' understanding of the biological underpinnings for ADHD tended to be superficial.

Causes of ADHD

A prominent theory of ADHD is that it involves an inherited neuropsychological disorder, involving executive functioning of the brain. This part of the brain is responsible for goal-directed regulation of thought and action and key functions involve (Tillman & Ganvold, 2015):

- 1) working memory (which involves the capacity to hold information active in the mind and mentally work with it to guide behavior)
- 2) inhibition, which is the ability to override a habitual but incorrect response
- 3) mental set-shifting, which means the ability to flexibly switch between tasks or mental sets

A meta-analysis of functional magnetic resonance imaging studies (using MRI technology to measure brain activity) with people with ADHD confirmed that the attention and impulsive deficits are associated with several areas of the brain that involve impairments in cognitive function (Hart, Radua, Mataix-Cols, & Rubia, 2013). These areas include 1) the fronto-striatal circuit; 2) the fronto-cortical circuit; and 3) the fronto-cerebellar circuits. The *fronto-striatal circuit* involves the neural pathways that connect the frontal lobe regions with the basal ganglia, which is responsible for cognitive or behavioral control (Durstun, Van Belle & de Zeeuw, 2011), with cognitive skills controlled by this circuit including decision making, memory, and attention (Cherkasova & Hechtman, 2009). The fronto-cortical circuit, as the name implies, is located in the front of the cortex. This circuit is responsible for executive functions having to do with the selection and perception of information, the manipulation of information in working memory, planning and organization, behavioral control, adaptation to changes, and decision making (Chudasama & Robbins, 2006). The fronto-cerebellar circuit mediates selective and sustained attention (Cubillo, Halari, Smith, Taylor, & Rubia, 2012).

Genetics

Having a parent with ADHD places a child at risk for ADHD. In a review of 20 twin studies, the heritability of ADHD was estimated at 76% (Faraone, Spencer, Aleardi, Pagano, & Biederman, 2004). Similarly, another review indicated heritability estimates between 70% and 90% (Polderman et al., 2007). The precise genetic mechanisms that contribute to the onset of ADHD are not known, but dopamine transmitter and receptor genes particularly, as well as several serotonin transporter and receptor genes, have been linked to the disorder (Faraone & Khan, 2006; Levy, Hay, & Bennett, 2006).

Along with neurobiological risks for the development of the disorder, there are also protective factors related to the development of the prefrontal cortex (certain gene systems and response inhibition, or the capacity to inhibit impulsive behaviors) that may help children, in the face of environmental stressors, to avoid ADHD (Nigg, Nikolas, Friderici, Park, & Zucker, 2007). Of note is that genetics are not the only biological mechanism by which children may develop ADHD.

Other Biological Risks

In addition to genetics, there are other biological mechanisms by which ADHD may develop (Bhutta, Cleves, Casey, Craddock, & Anand, 2002; Kahn, Khoury, Nichols, & Lanphear, 2003; Linnett et al., 2003). These include prenatal factors, including maternal smoking, alcohol, and drug use during pregnancy, prenatal exposure to pollution (Perera et al., 2014), and complications during pregnancy. Problems with delivery and

preterm birth may also lead to the development of ADHD . Lead exposure in childhood is another route to the development of ADHD (Choi, Kwon, Lim, & Ha, 2016).

Family Influences

Family and social risk influences may be a cause, as well as a consequence of ADHD (Counts, Nigg, Stawicki, Rappley, & von Eye, 2005). It is also likely that certain risk factors, such as family adversity, affect children with a genetic vulnerability to developing ADHD (Laucht et al., 2007).

Attachment difficulties may be a pathway to attention problems and related symptoms that are severe enough to meet diagnostic criteria for ADHD (Storebe, Rasmussen, & Simonsen, 2016). Severe early deprivation, as often occurs in institutional rearing, may be one way this occurs. Institutional rearing was associated with elevated inattention and over-activity into early adolescence, even when a child had been adopted at an earlier stage (Stevens et al., 2008).

Single-parenting specifically may also be an influence for the development of ADHD, as indicated by a study of almost 3,000 elementary school children who were followed up twice a year for two years (Choi et al., 2016). Those who had high levels of lead in their blood and who were from single-parent families were most at risk for being diagnosed with ADHD.

Neighborhood and Socioeconomic Influences

Other environmental factors apart from the family may influence the development of ADHD. Using the 2007 National Survey of Child Health, a nationally representative data set ($N = 64,076$), Razani et al.(2015) found that lower neighborhood social support was associated with higher odds of ADHD diagnosis and higher ADHD severity. This result even held up after taking into consideration age, gender, family, income, and other neighborhood characteristics.

Additionally, low socioeconomic status (SES) may contribute to ADHD. A systematic review of 42 studies found that children from low SES backgrounds were more likely to have an ADHD diagnosis than their counterparts from higher SES homes (Russell, Ford, Williams, & Russell, 2016). The relationship was partly explained by factors associated with low SES, including mental health problems in parents and smoking during pregnancy. In sum, while dominant theories involve neurodevelopmental risks, social factors may also play a role, particularly in the presence of genetic risk.

Recovery and Adjustment

Psychological and social influences, namely the family, are associated with the course of the disorder, that is whether it remits over time, and the child's level of functioning or adaptation. Considering child factors, less severe ADHD (Biederman, Ball, et al., 2008), and a lack of psychiatric co-morbidity (Biederman, Ball, et al., 2008) are associated with a better adjustment and recovery.

Family factors play a considerable role for the child's adjustment. Pervasive child problems in the way of daily negative interactions and behavioral management difficulties demand considerable parental resources (Coghill et al., 2008). These demands often result in failure, fatigue, demoralization, isolation, strained marital relationships, and neglect or overindulgence of siblings. A recent systematic review indicated that parental stress with having a child diagnosed with ADHD is considerable, and is worse with male children and when hyperactivity is present (Theule, Wiener, Tannock, & Jenkins, 2013).

Any parental or family difficulties that contribute to inconsistent, coercive, or decreased efforts at managing the child's behavior may increase problem behaviors in the child with ADHD. Family adversity, particularly marital conflict, is associated with ADHD (Counts et al., 2005). It is unclear whether these factors contribute to or are a consequence of child ADHD. Parental expressed emotion may moderate the genetic effect associated with ADHD (Sonuga-Burke et al., 2008). Specifically, maternal warmth may protect against ADHD becoming severe or conduct disorder developing.

If a parent has a mental health concern themselves, such as depression or ADHD, such individuals often lack the motivation or organization to complete effortful tasks that require ongoing work, such as the consistent implementation of behavioral management techniques (Biederman, Ball et al., 2008). More information on the experiences of parents as revealed by the qualitative research is covered in the next section.

Another factor identified in families involves household composition. A two-parent home may be a protective influence because two parents are more likely to

successfully manage the stress related to having a child with ADHD. A child's living in a single-parent home contributed to worse outcomes for parent-involved treatment (Corcoran & Dattalo, 2006). At the same time, having a child with ADHD puts a strain on marriages. Wymbs et al. (2008) found that parents with a child with ADHD were more likely to divorce than parents with a child without ADHD.

Although family factors are considerable, peer acceptance and low SES are other environmental influences on how well a child adjusts. Although children with ADHD often have difficulties with peers, the presence of social acceptance can serve as a protective factor. When adolescents with ADHD were tracked over 18 months of time on school performance, grades were higher for those who had social acceptance (Dvorsky et al., 2016). This result particularly held true for adolescents with high levels of inattention.

Finally, children in poverty tend to be less successful than their non-poor counterparts in terms of ADHD improvement when undergoing treatment (Jensen et al., 2007). This may be due to lack of access to health care and to managing the stressors of poverty in which child ADHD symptoms are assigned a lower priority.

Impact on Parents

In a systematic review and meta-synthesis of 80 qualitative studies of the parenting experience of a child with ADHD (Corcoran et al., 2016), parents struggled with the emotional burden of caring for a child with ADHD and managing the difficult behaviors their children displayed, including experiencing myriad intense, negative

emotions such as:

- Exhaustion
- Isolation
- Anxiety
- Irritation, frustration, anger and resentment
- Embarrassment
- Despair and desperation
- Powerlessness and helplessness
- Grief
- Guilt
- Suicidal

Parents tended to feel that their children, and not them, had control. In Funes de Hernandez (2005), a parent said, “It’s hard to be the mother you want to be because your child doesn’t allow it” (p. 127). Another mother in Funes de Hernandez (2005) expressed:

“Everything revolves around X for a happy or peaceful household. I feel like he’s in charge. Everything he wants he gets. He wears you down and knows exactly which buttons to push to get what he wants. I give in for my peace of mind and then I get angry because I’ve given in to him. I get angry with myself and angry with everyone because I’ve done the wrong thing” (Funes de Hernandez, 2005, p. 127).

Caregiving was experienced as a “24-hour a day” undertaking (Hallberg, Klingberg, Reichenberg, & Moller, 2008). As one mother of a seven year old said, ““To be a teacher, mother, minder, carer, everything and twenty four [hours] round the clock it's just an exhausting experience”” (McIntyre & Hennessy, 2012, p. 72). Typical family routines proved to be a daily challenge (e.g., Canfield, 2000; Moen, Hall-Lord, & Hedelin, 2014; Taylor et al., 2008; Wong & Goh, 2014). As one mother reported, “...It is very hard for my son to follow the daily routine, such as abiding by the daily rules and finishing his work at hand” (Lin, Huang, & Hung, 2009, p. 1679). Certain times of the day presented particular difficulty. One parent stated,

Nighttime is, is bad because my son doesn't have a high sleep requirement. He, if he doesn't have his nighttime meds, he doesn't go to bed until mid-night, one, two, three, four o'clock in the morning. He doesn't sleep without nighttime meds. Um, bedtime is the hardest because it's hard for them to calm down” (Firmim, & Phillips, 2009, p. 1165).

Another parent in the same study described difficulties with the morning routine, ““And no matter how early we start, how early they get up, they still end up running out the door. So that's always a battle. So that's how we start our days, just about every day, it drives me insane”” (Firmim & Phillips, 2009, p 1163). A single mother, speaking about mornings, said, ““He's constantly making the whole family late...and we're always mad at him”” (Hancock, 2003, p. 90).

Other people found the hours after school very hard as one participant described: “Homework, homework here is ‘Lord help us.’ ...You spend all day at school and then trying to do homework, and then they get distracted, they get frustrated, the anger mounts” (Firmim & Phillips, 2009, p. 1165). Another parent described trying to do routine errands after school:

“Nothing is easy and I’m not only talking about school work, I’m talking about if I need to run an errand after school. If I haven’t prepped him for it in advance there can be a meltdown and lot of times, you can’t do it. Or, if you do it, you pay the consequences of whiny, pain-in-the-ass crying. So I have to think very carefully about what needs to be done when they come home from school, so I can give them time to adjust to what we have to do. Sometimes that doesn’t even work... I always have to be thinking. I always have to be planning... I have to do even more of that than most mothers. So it’s difficult” (Roosa, 2003, p. 197).

As Moen et al. (2011) summarized participants’ responses about how normal routines became disrupted:

The child with ADHD was described as getting stuck in a rut without being receptive to attempts to correct his or her behavior. Consequently, a normal everyday situation might be turned upside down; hence, joy and expectations the family anticipated were transformed into a sense of failure. As one father explained, “We were going to find a Christmas tree before Christmas. He sat bickering with his brother

in the back seat. We were looking forward to having a nice trip, as you often do before Christmas. He had a massive temper tantrum, a bit extreme, I thought—bad language, behaviour etc.; he just wouldn't calm down, so the trip was completely ruined” (pps. 447-449).

The challenges of parenting spilled into other areas of the parents' lives. This stress involved threats to health (Bull & Whelan, 2006; Hallberg et al., 2008), and psychological, marital, and social well-being (Peters & Jackson, 2009). In multiple studies, parents changed or quit their jobs to better manage their child's behaviors (e.g., Ho, Chien, & Wang, 2011; Hallberg, et al., 2008; Moen et al., 2011).

Parents said their children's relentless misbehavior negatively affected their marital relationships (Bullard, 1996; Cawley, 2004; Dennis, Davis, Johnson, Brooks, & Humbl, 2008; Hallberg et al., 2008; Hammerman, 2000; Ho et al., 2011; Howard, 1993; Kilcarr, 1996; Lin et al., 2009; Roosa, 2003; Moen et al., 2011; Okafor, 2006; Squire, 1993): “My marriage nearly split up along the way” (Bull & Whelan, 2006, p. 672). This happened for various reasons.

McIntyre and Hennessy (2012) described that children's need for constant attention meant that children disrupted any time parents had together. As one of the study's participants described, “From a very young age if myself and [husband] were sitting down to relax he would climb in between us, if you're having a hug he'd climb in between us, if [husband] put his arm around me he'd climb in between us ... every time we were having a conversation we were interrupted” (p. 72). Second, mothers often became the primary disciplinarians, again for various reasons. One primary reason was

that fathers did not know how to manage the child's unruly behaviors (Chavarela, 2009; Funes de Hernandez, 2005). A mother described, "My husband is very impatient when he deals with my son. He often beats him while taking care of him. Thus, I can't let my husband help me to take care of my son" (Lin et al., 2009, p. 1690). Another participant in Lin et al. (2009) lamented that this led to lack of support: "My son doesn't like to stay with his father because he always ignores him or shouts at him... You see, no one can give me a hand, not even my husband..." (Lin et al., 2009, p. 1698). Because of the effort and finessing involved to manage these children and sometimes cultural reasons (Latino) Oquendo, 2013; Chavarela, 2009) mothers preferred to handle discipline alone, wanting husbands to only offer support and back-up only as needed (Bull & Whelan, 2006). Another reason men weren't as involved with their children was because of their own undiagnosed ADHD (Singh, 2003; Roosa, 2003). They were therefore unable to provide the patience, organization, and structure that such a child demands. In the section on intervention, implications of these findings are explored for working with parents of children diagnosed with ADHD.

REVIEW QUESTIONS:

1. What is NOT true about the presumed causes of ADHD?
 - A. The primary theory involves impairments in the executive functioning of the brain.
 - B. Neighborhood social support may play a role.
 - C. Deprivation associated with SES may play a role.

- D. Inconsistent discipline by parents causes ADHD.
2. What is NOT a biological reason for ADHD developing?
- A. Genetics
 - B. Maternal smoking during pregnancy
 - C. Complications during delivery
 - D. Preterm birth
 - E. Environmental toxins, such as lead and pollution.
 - F. These are all biological reasons.
3. Which of these is NOT a protective factor conferred by parents?
- A. Lack of genetic risk.
 - B. Mothers not smoking during pregnancy
 - C. Providing their children with a high-protein, low carbohydrate diet.
 - D. Two-parent households
 - E. Consistent discipline

Intervention

The evidence for treatment of ADHD mainly centers on psychosocial interventions, medication, and, to a lesser degree exercise.

Psychosocial Interventions

Behaviorally based interventions at the family and school levels have received empirical support in the literature (Pelham & Fabiano, 2008) and will therefore be a focus

here. Despite the use of cognitive-behavioral therapy (CBT), particularly social skills training, with youth with ADHD, such interventions have not received a great amount of support (Pelham & Fabiano, 2008; Sonuga-Barke et al., 2013; Storebø, Skoog et al., 2011). The American Academy of Pediatrics guidelines recommend behavior therapy as the first-line treatment for children 4 to 5 years of age before considering medication (Subcommittee on Attention-Deficit/ Hyperactivity Disorder, 2011).

The empirical literature on treatment for ADHD focuses on behavioral *parent training (BPT)*, which was initially developed to address conduct problems. Children learn prosocial behaviors, such as following directions, completing homework, doing household chores, getting along with siblings by parents providing positive reinforcement through:

- praise
- desired activities, such as screen time
- token economies
- rewards.

Parents are taught to respond to children's negative behaviors by ignoring or punishing the child so that he or she will have to suffer negative consequences. These include "time out" from reinforcement, the loss of points and privileges, or work duty.

Parent training is a brief treatment model with about 12 sessions in either individual or group formats. The strategies learned must be enacted consistently long after treatment is over so that the child does not revert to previous undesirable behaviors.

This educational material is generally presented through a variety of formats, including didactic instruction, interactive discussion, modeling, role play, and feedback. These elements are presented in several empirically supported training manuals and programs (Eyberg, Nelsen, & Boggs, 2008): *The Parent Management Training Oregon Model* (ages 3–12) (Patterson & Gullion, 1968); *Helping the Noncompliant Child* (ages 3–8) (Forehand & McMahon, 1981); *Parent–Child Interaction Therapy* (ages 2–7) (Brinkmeyer & Eyberg, 2003); *The Incredible Years* (ages 2–8) (Webster-Stratton, 1981, revised 2013); and the *Positive Parenting Program* (called Triple P) (preschool through adolescence) (Sanders, 1999).

Along with behaviorally based skill-building, psychoeducation is typically offered for parents of children with ADHD so that parents gain knowledge about ADHD, its treatment, and how to manage parental stress. More specifically from the results of the meta-synthesis described earlier, providers need to validate parents' level of stress and the toll it takes on their ability to manage when they are faced with their children's behavior problems. Providing support and helping parents connect with support – family and friends and/or support groups or other formal services – is key for a parent's own mental health, health, and partner relationships. Self-care strategies and respite care should be a part of work with parents to prevent or ameliorate any possible negative consequences to themselves, as well as their children. Given the finding that the marital relationship was often under strain, social workers should center on working with parents together to help unify maternal and paternal parenting efforts and to help the couple feel supported.

Because children with ADHD have problems with schoolwork, other interventions for parents include the following (DuPaul & Power, 2000):

- 1) structuring the home environment so that the child has a quiet, uncluttered place to work relatively free of distractions, perhaps with a parent sitting nearby)
- 2) regular teacher verification of satisfactory homework completion
- 3) a home-based reinforcement system featuring regular school-home note exchanges

Several meta-analyses have now been conducted on behavioral therapy (Fabiano, Schatz, Aloe, Chacko, & Chronis-Tuscano, 2015), and the results have been mixed. Also, the meta-synthesis of 80 qualitative studies of parents with children with ADHD indicates that parents often find that discipline techniques only worked in a limited way with these children (Corcoran et al., 2016). As one participant said, ““There is no easy way to discipline an ADHD child”” (Bull & Whelan, 2006, p. 671), and others in Taylor (1999) stated, ““It’s very frustrating to figure out how to discipline this kid”” (p. 21) and ““We’ve tried a lot of different behavior programs”” (p. 21). The difficulty with behavioral strategies was echoed in Kendall (1998):

“I get exhausted trying to figure it all out. I know that rewards are supposed to work, but after awhile you run out of rewards and you run out of interest in providing them, especially when it seems it never goes anywhere except just doing the day-to-day stuff one has to do to survive. I mean, do I give him

rewards for getting up in the morning, and getting dressed on time and getting to school on time and doing his homework and this and that?” (p. 847).

The limits of discipline may be at least partially explained by the fact that the importance of anticipated rewards for children with ADHD is diminished. Seymour et al. (2016) report on a study in which rewards were dependent on completion of a task that was designed to frustrate children. Compared to children without ADHD, children with the diagnosis were more likely to quit. If anticipated rewards are not as meaningful for children, they are less likely to persist in their efforts toward goal-directed behavior when they become frustrated. Patroset al. (2016) discuss the distinction between two different types of impulsivity seen in ADHD: “rapid-response impulsivity” and “reward-delay impulsivity,” also called “choice impulsivity.” The latter has not been studied as much as the former. These researchers conducted a meta-analysis of studies that compared children with ADHD and those without on choice impulsivity. Based on 26 studies, Patros et al. (2016) indicated moderate differences between the two groups, supporting the hypothesis that youth with ADHD show more choice impulsivity. Another review supported that children with ADHD responded impulsively to rewards and also that they select smaller, immediate rewards rather than larger, delayed rewards (Modesto-Lowe, Chaplin, Soovajian, & Meyer, 2013). The reviewers described this phenomenon as a problem with motivation for rewards.

Preschool

Guidelines put forward by the American Academy of Pediatrics (2011) and the American Academy of Child and Adolescent Psychiatry indicate that behavioral therapy

is a first-line treatment for preschoolers. A couple of systematic reviews have been done on behavioral parent training with the parents of preschoolers. Parent-rated outcomes revealed moderate effect sizes on ADHD symptoms, conduct problems, and negative parenting (Mulqueen, Bartley, & Bloch, 2015) and were maintained at six (Charach et al.(2013) and 12 months (Rimestad, Lambek, Christiansen, & Hougaard, 2016) Group and individual programs appeared as effective as each other, as did different program packages. More sessions were associated with greater benefits.

In sum, the systematic reviews of parent behavioral training with parents of preschool children have shown more consistent benefits than those for school-aged children. However, currently a quarter of children ages four to five receive medication only (Visser et al., 2015). A tentative implication is that children with ADHD should be identified early and provided with psychosocial treatment. Preschools and pediatric settings should identify such children and refer to BPT.

Adolescents

Psychosocial interventions for adolescents have not been as well studied as those for school-aged and younger children with ADHD. For adolescents, psychosocial treatments have the largest impact on homework completion, organizational skills, parent-reported symptoms of ADHD, and co-morbid disorders Chan et al. (2016). Evidence supports the use of more intensive, multicomponent psychosocial treatments -- behavioral, cognitive-behavioral, and skills training directed at the adolescent, parent,

teacher, or both the parent and teacher – rather than CBT in a single modality with the adolescent.

Adults

For adults, cognitive-behavioral therapy includes education about ADHD, training in organizing and planning, learning skills to reduce distractibility, and cognitive restructuring (learning to think more adaptively in situations that cause distress) (Safren et al., 2010). In a review of the meta-analyses having to do with adult ADHD, Moriyama, Polanczyk, Terzi, Faria, and Rohde (2013) note a lack of research on psychosocial treatments.

School Interventions

School-based services for children with ADHD rest on a foundation provided by several federal laws. Section 504 of the 1973 Rehabilitation Act prohibits schools from discriminating against people with handicaps. The Individuals with Disabilities Education Act (IDEA) of 1990 (the reauthorization of the Education for All Handicapped Children Act, PL 94-142) also has several relevant provisions for persons with ADHD. ADHD may qualify children for special education services under the “disability category” of “other health impairment”) when symptoms affect school performance. The IDEA further provides free and appropriate public education for children with ADHD and a multidisciplinary evaluation process toward the development of an individualized educational plan. Additionally, the Americans with Disabilities Act (ADA) ensures that

reasonable accommodations must be made for individuals who have a substantial limitation of a major life activity, such as learning. Social workers, as well as parents of children with ADHD, can find more information about these laws and their enactment at state departments of education.

Medication

More than half of children with ADHD receive medication (Visser et al., 2015). Recent trends involve both a sizeable increase in stimulant use among youth (Burcu, Zito, Metcalfe, Underwood, & Safer, 2016), with non-psychiatrists prescribing more than psychiatrists (Safer, 2016).

The primary psychostimulant drugs are methylphenidate, the amphetamines (including dextroamphetamine and methamphetamine), and pemoline. These are classified as Schedule II drugs by the Drug Enforcement Agency because of their abuse potential. Schedule II is the most restrictive classification for medications, prohibiting both their prescription by phone and the writing of refills. The amphetamines have more recently taken over as the most prescribed class of stimulants (Safer, 2016).

A recent meta-analysis was done on studies of stimulants that were taken for at least 12 weeks (Maia et al., 2014). In the seven studies that were included, large effect sizes were shown for both inattention and hyperactivity/impulsivity, and with both parent and teacher ratings. A systematic review of 185 studies of methylphenidate compared to placebo mainly but also no intervention found that methylphenidate improved teacher-reported ADHD and behavior symptoms, and parent-reported quality of life for youth

with ADHD (Storebø, Ramstad et al., 2015). Another systematic review was done on amphetamine for ADHD (Punja et al., 2016). The pooled results for 23 randomized controlled trials indicated that amphetamines reduced ADHD core symptoms, but adverse events, such as insomnia, stomach pain, and appetite suppression, were common. No one amphetamine derivative was advantaged over another, and there were no differences between long-acting and short-acting preparations. To support these findings, a meta-analysis of functional magnetic resonance imaging studies of ADHD suggests that stimulant use (six months to three year use) is associated with more normal basal ganglia function in youth (Hart et al., 2013).

Although the stimulants have traditionally been the drug of first choice in treating ADHD, alternatives are sometimes necessary due to side effects or lack of positive impact. (See Daughton and Kratochvil, 2009, for more information on stimulants and other medications prescribed for ADHD, their dosages, and advantages and disadvantages.) Some typical alternatives are bupropion (Wellbutrin) and atomoxetine (Strattera), a selective norepinephrine reuptake inhibitor (SNRI). The Integrated Data Exploratory Analysis (IDEA) study, in which data from six randomized controlled trials of were pooled, indicated that about equal numbers of youth responded (were much improved) as did not respond to atomoxetine (Newcorn, Sutton, Weiss, & Sumner, 2009). Youth who improved showed at least a minimal response at week 4. Therefore, the recommendation is to either augment or switch medications at this point if there is no improvement.

A final note about medication has to do with the way it is provided. In the MTA study, medication was only a superior condition when dosages were monitored frequently and titrated upward to an optimal dose (Swanson et al., 2008). A study using a large claims database from U.S.-managed healthcare organizations showed that the titration of dosage in usual practice is less than at recommended levels, suggesting that at least some children are not receiving optimal treatment (Olfson, Marcus, & Wan, 2009).

Despite guidelines put forward by the American Academy of Pediatrics (2011) and the American Academy of Child and Adolescent Psychiatry that behavioral therapy is a first-line treatment for preschoolers and it should be at least one part of intervention for school-age children, a quarter of children ages four to five receive medication only (Visser et al., 2015).

Medication for Adolescents

Stimulant treatment is increasing for adolescents more so than that for children (Safer, 2016). Clinical practice guidelines for adolescents are derived either from studies with school-aged and preschool children, and from other studies aggregating children and adolescents. In a review of treatments, Chan et al. (2016) recommended stimulant class medications as first-line agents for adolescents, followed by atomoxetine and extended-release guanfacine.

Despite concerns about stimulant overprescription in youth, recent estimates indicate that only 45.3% of 12- to 17-year-olds with ADHD report receiving medication during the past week, whereas 12.5% had received behavioral therapy during the past

year, and 14.3% reported receiving neither ADHD medication nor behavioral therapy (Chan et al., 2016). Among adolescents transitioning into young adulthood, the rate of prescription receipt for ADHD medication decreased faster than the rate of reported symptoms, suggesting premature treatment cessation despite continued symptoms.

Parents' Decision to Medicate their Children

Two meta-syntheses of the qualitative studies (Ahmed et al., 2013; Corcoran et al. 2017) The school system had an influence on decision-making with parents feeling some pressure from teachers to put their child on medication due to children's poor academic and behavioral performance at school. Parental disagreement about these matters was common at this point, and family and friends opinions – both for and against – weighed in. Parents were worried about side effects of medication, the potential for addiction, side effects, the cost of medication, and whether there would be long-term consequences from medication use. For some parents, the noticeably positive impact of medication on children's behavior outweighed these issues, but other parents' discontinued their children's medication because of them. The availability of support and information from the healthcare system, which often parents found sketchy, was another influence on treatment decisions. Many parents wanted to exhaust other treatment options first – usually behavioral management programs and natural remedies – before they decided to use medication. Ahmed et al.'s (2013) meta-synthesis was limited by including only published studies and a focus on treatment decisions.

In the Corcoran et al. (2016) meta-synthesis, Similar to Ahmed et al.'s (2013) meta-synthesis, this study found that people struggled with the decision about whether to medicate their children given side effects, the classification of the medication as a Schedule II drug, and the admission of defeat it appeared to bring. Providers should have full exploration with parents around the potential benefits and risks associated with such treatment, taking into account parents' preferences. In order to get general practitioners to engage in this process with parents, Brinkman et al. (2013) created a shared decision making intervention, which shows promise. Parents were provided with information about ADHD and various treatments available, as well as their pros and cons. Parents' experience with behavioral treatment, and their goals, opinions, and values were also elicited in a structured way. In this way, parents selected treatments in a much more informed manner and were more cooperative as a result.

Drug Holidays

There are some mixed opinions about whether children should take stimulants daily or whether it should only be as an "as needed" basis when the child needs to maintain focus, such as on schooldays. A drug holiday refers to "the deliberate interruption of pharmacotherapy for a defined period of time and for a specific clinical purpose" (Howland, 2009, p. 1). NICE guidelines in the United Kingdom and guidance by the American Academy of Child and Adolescent Psychiatry in the U.S. recommend intentional breaks from medicine-taking (drug holidays) to test the continuing need for therapy in children and adolescents with ADHD (Pliszka & AACAP Work Group on

Quality Issues, 2007; NICE, 2016). In practice, American doctors tend to believe more than English doctors that children should not have drug holidays despite the fact that national guidelines are similar. Reasons for drug holidays include the following: 1) to determine whether medication is still needed; 2) managing medication adverse effects, including insomnia, appetite suppression and growth retardation; and 3) management of drug tolerance. For adolescents specifically, a drug holiday might convince them that they do need to take medication if they become resistant to doing so. The authors of this review conclude that drug holidays are beneficial.

Combining and Sequencing of Medication versus Parent Behavioral Therapy

Recent data from the Centers of Disease Control and Prevention indicates that medication is the most often used treatment for ADHD (43.3%); only 13.3% received behavioral treatment alone, and 30.7% received combination therapy (Visser et al., 2015). However, both the American Academy of Pediatrics and the American Academy of Child and Adolescent Psychiatry recommend behavioral treatment as a first-line strategy, especially for mild and moderate cases.

A study on the sequencing of treatments found that initiating behavioral intervention first lead to better client outcomes than beginning with medication (Pelham et al., 2016). About a third of children responded to this initial scenario. Interestingly, if practitioners began with medication, adding behavioral intervention led to poor parent engagement and did not produce better outcomes. The researchers further discovered that if clients did not respond sufficiently to initial behavioral intervention, more intensive

behavioral intervention or medication could enhance outcomes. They concluded that beginning with a low dose of behavioral intervention and only adding intensity to the intervention or medication is a cost-effective model that can be adapted to school and community settings.

Concerns Related to Medication Prescription for Children

Although pharmacological intervention is certainly less expensive than psychosocial interventions, there are concerns with the use of medication for children and adolescents. For preschoolers, guidelines by the American Academy of Pediatrics (2011) and the American Academy of Child and Adolescent Psychiatry recommend parent behavioral management as a first-line treatment for preschoolers and for school-age children, particularly for mild or moderate cases. Despite these guidelines, a quarter of children ages four to five receive medication only (Visser et al., 2015). Overall, medication is the most often used treatment for ADHD (43.3%): only 13.3% received behavioral treatment alone, and 30.7% received combination therapy.

Second, some people experience intolerable adverse reactions to medication. In the MultiModal Treatment of ADHD study, a majority of participants (64%) experienced a mild side effect, and a proportion (14%) suffered moderate-to-severe side effects (MTA, 1999). In the Schachter, Pham, King, Langford, and Moher (2001) meta-analysis, decreased appetite was common, according to both parent and teacher reports, and was statistically significant compared to placebo. Lack of appetite may translate into

a negative effect on growth (see Faraone, Biederman, Morley, & Spencer, 2008, for a review).

Medication for Adults

The number of office-based physician visits by adults leaving with a prescription for a stimulant has grown. A large proportion of these are not for ADHD, indicating a substantial amount of off-label use. Off-label use is reported to be at least 40% of prescriptions, and includes the following uses: weight loss, fatigue, cognitive enhancement, and substance abuse (Safer, 2016). Other major recent trends are that total stimulant prescription sales to adults have surpassed those for youth, and more adult women than men are prescribed stimulants.

A systematic review was recently conducted on medications for adult ADHD (Castells, Ramos-Quiroga, Bosch, Nogueira, & Casas, 2011). In seven studies, all types of stimulants investigated were effective in the short term, but not any more so than other medication interventions. Side effects were common and contributed to high attrition from treatment. However, mixed amphetamine salts acted to promote treatment retention.

If stimulants either do not work for certain adults or are associated with adverse effects, then antidepressants have been recommended. A systematic review of these medications was conducted with eight randomized controlled studies meeting criteria (Verbeeck, Tuinier, & Bekkering, 2009). The majority of these studies involved

bupropion (Wellbutrin) ($n = 5$). When these studies were pooled, a beneficial effect for bupropion was found compared to placebo.

More recently, in their review of meta-analyses having to do with adult ADHD, Moriyama et al. (2013) concluded that stimulants are effective in decreasing ADHD symptoms on a short-term basis with a medium to large effect size. Wellbutrin was superior to placebo but less effective than stimulants.

Exercise

Exercise is not discussed as frequently as behavioral parent training and medication, but it can offer some important benefits. Based on ten studies, here was a significant effect of exercise on ADHD functional outcomes ($g = 0.627$) (Vysniauske, Verburch, Oosterlaan, & Molendijk, 2016). Results suggest that exercise has a modest positive impact on ADHD functional outcomes, such as executive functions and motor skills, with longer interventions yielding better results. Another systematic review was conducted by Neudeckel, Mewes, Reimers, and Woll (2015) on exercise interventions for youth with ADHD. Seven studies focused on immediately after posttest and 14 looked at long-term outcomes. They did not perform a meta-analysis but found benefits for aerobic exercise (cycling and running) and team sports for children and adolescents.

REVIEW QUESTIONS:

1. What is NOT an evidence-based interventions for ADHD?

- A. Medication
 - B. Behavioral parent training
 - C. Herbal supplements
 - D. Social skills training
 - E. C and D
2. Which of the following interventions have good research support?
- A. Social skills training
 - B. Individual cognitive-behavioral therapy for the child
 - C. Sand tray therapy
 - D. None of the above
3. For behavioral parent training, which of the following age groups show the most effective use?
- A. Preschool
 - B. School-age
 - C. Adolescent
 - D. Preschool and School-age
 - E. All are equally effective
4. What is NOT a recent trend in prescribing medication?
- A. Increased prescribing overall.
 - B. Increase in adult prescriptions.
 - C. More adult men are prescribed medication.
 - D. Increased use for off-label reasons for adults.

5. What is NOT a possible reason for drug holidays?
 - A. For withdrawal
 - B. To test whether medication is still needed.
 - C. To recuperate from side effects.
 - D. To persuade adolescents that medication may still be helpful.

6. What is NOT an element of behavioral parent training?
 - A. Modeling of skills for parenting
 - B. Reinforcement for on-task behavior.
 - C. Ignoring annoying behavior.
 - D. Punishing
 - E. All are a part of behavioral parent training

7. Because of parental stress, what is important for the practitioner to provide to parents:
 - A. Validation
 - B. Support
 - C. Information about ADHD
 - D. Working with parents on how to be unified on discipline

Controversies

ADHD is considered an inherited neuropsychological disorder, but substantive supporting evidence is lacking (Johnson, Wiersema, & Kuntsi, 2009). It is currently

defined by its behavioral symptoms rather than by any particular biological marker (Visser & Jehan, 2009). Evidence for the biological etiology of ADHD has supposedly been supplied from objective evidence from functional imaging tools, such as MRI's. However, deducing brain activity from blood flow to the brain in a controlled laboratory environment may be a reductionistic view and cannot determine the exact causality of ADHD. Additionally, social influences, such as attachment patterns, parental stress, and poverty, and other biological contributing factors, such as maternal smoking, may be under-recognized.

Another controversy is related to the fact that the ADHD diagnosis is made based on behavioral symptoms. Storebe, Rasmussen, and Simonsen (2016) make the argument that some ADHD diagnoses may stem from children having attachment difficulties that give rise to attention problems and related symptoms that can meet criteria for ADHD. "Given the focus on behavioral symptoms in ADHD diagnosis, it is possible that some children have ADHD stemming more from attachment difficulties than from innate neuropsychological differences; in 'core' ADHD, genetic factors account for much of the variance, but in 'symptomatic' ADHD, attachment factors may play a greater role in the etiology" (p. 193). Because ADHD relies on behavioral symptoms and not necessarily the causation of these symptoms – and indeed, there is no biological test for ADHD for its neuropsychological foundation on a case-by-case basis – multiple pathways may lead to the diagnosis.

Another problem is that psychopharmacological intervention is often handled by primary care physicians rather than by psychiatrists. The general practitioner commonly

sees the parent and child and may make a diagnosis and provide a prescription largely based on parent complaints. As discussed, teacher reports are critical, as is a comprehensive assessment.

In a synthesis of all the qualitative studies that were done on what it was like to raise a child with ADHD, parent interviews indicated there was no standardized route by which their children became diagnosed with ADHD (Corcoran et al., 2016). However, the school system often first identified a child in need of further assessment for ADHD. Some children were evaluated within that system and others went to psychologists or medical doctors (although not typically psychiatrists).

He or she may find that many parents, suspecting ADHD in their children, have brought their children to their primary care providers, who then diagnosed the child with ADHD and prescribed medication. However, a national survey has indicated that the majority of primary care physicians do not use *DSM* criteria to diagnose ADHD (Chan, Hopkins, Perrin, Herrerias, & Homer, 2005), and one-fifth to one-third do not routinely incorporate teacher and school information into the evaluation process.

Another critique has to do with the fact that, as argued by Conrad and Bergey (2014), that ADHD has been medicalized in the U.S. since the 1960s and continues to consume the vast majority of all Ritalin produced. European countries -- the United Kingdom, Germany, France, and Italy -- rely on the International Classification of Diseases (ICD) criteria, which involves hyperkinetic disorder rather than the nomenclature "ADHD" and relies on a more severe and extreme threshold of behavior. Therefore, fewer children are diagnosed in those countries, although rates have been

increasing. Conrad and Bergey (2014) attribute the increased medicalization of ADHD to the spreading worldwide influence of the DSM and Western psychiatry, as well as pharmaceutical companies that have saturated the U.S. market and are now turning to expansion in other countries. These worldwide patterns indicate that, rather than being a fixed entity, the diagnosis of ADHD is subject to social mores about child behavior and to shifting criteria, as well as the marketing efforts of pharmaceutical companies.

REVIEW QUESTIONS:

1. What are some of the controversies attached to medication as a treatment?
 - A. Medication to treat ADHD is a Schedule II drug.
 - B. Medication can be abused.
 - C. Side effects are common.
 - D. It is prescribed to preschool children in the absence of behavioral treatment.
 - E. All of the above.
2. What is NOT a common side effect of stimulant medication?
 - A. Appetite suppression
 - B. Growth retardation
 - C. Difficulty sleeping
 - D. Weight gain
3. What are reasons parents do not want to medicate their children's ADHD EXCEPT?

- A. Side effects the child experiences
- B. The fact that the stimulants are a controlled substance.
- C. Other people cautioning them against the use of medication.
- D. Because there are a number of effective herbal remedies on the market.

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