

Tuesday, 1:00 – 2:30, B2

"Attention problems": Autism, ADHD or Intellectual Disability?

Orlando L. Villegas, PhD

Objectives:

Identify effective methods for the practical application of concepts related to improving the delivery of services for persons with developmental disabilities

The participants will receive the basic information needed to identify "attention problems" as a temperamental characteristic or as a symptom of a condition such as ADHD, Autism or Intellectual Disability. Implications for treatment will be discussed.

Notes:

Attention problems

Autism, ADHD or Intellectual Disability?

Orlando L. Villegas, Ph.D.

Objectives:

- ▶ Attendees will be able to:
 - Increase their understanding of the terms "attention" and "distractibility"
 - Identify the different types of attention
 - Differentiate "attention problems" from "intended distraction"
- ▶ Attendees will be able to identify "attention problems" as a symptom of:
 - Autism
 - ADHD
 - Cognitive disability
- ▶ Attendees will increase their understanding of "attention problems" as symptoms of other conditions.

Orlando L. Villegas, Ph.D.

Words of caution

- ▶ "Decreased attention span...distractibility...are sensitive but non-specific brain functions and behavioral patterns. These expressions of altered functioning should be acknowledge as non-specific, rather than trying to fit them into specific diagnoses."
- ▶ "These abnormalities should be viewed in terms of underlying developmental processes and not as components of a discrete non-overlapping disorder."

Berger, I., Remington, A., Leitner, Y. & Leviton, A. Editors. (2015). Brain development and the attention spectrum. *Frontier in Human Neuroscience*. February 2015 Vol 9 Article 23, pag 4.

Orlando L. Villegas, Ph.D.

Words of caution

"The tendency to squeeze a group of symptoms into a diagnostic entity has the potential to lead to a non-accurate diagnosis, a less successful treatment plan, and has the potential to be of little prognostic value."

Berger, I., and Nevo, Y. (2011). Early developmental cues for diagnosis of attention deficit/hyperactivity disorder in young children. *Developmental Disabilities Research Review* 17, 170-179.

Orlando L. Villegas, Ph.D.

This is why...

An individual with attention problems may have:

- ▶ ADHD
- ▶ Autism
- ▶ Cognitive disability
- ▶ ADHD + Autism
- ▶ ADHD + Cognitive Disability
- ▶ ADHD + Autism + Cognitive Disability
- ▶ Autism + Cognitive Disability
- ▶ Other diagnosis
- ▶ No definite diagnosis.

Orlando L. Villegas, Ph.D.

Attention ⁿ

- ▶ Application of the mind to any object of sense or thought.
 - Three functions: a) Orienting b) Focusing c) Maintaining
- ▶ The process of focusing consciousness to produce greater vividness and clarity of certain...contents.

(*) Attention. (2015). In *Webster's Medical Dictionary*. Springfield, MA: Merriam-Webster Inc. On-line edition

Orlando L. Villegas, Ph.D.

Attention types

- ▶ Sustained attention: the ability to focus on one specific situation, for a period of time, without distraction.
- ▶ Divided attention: the ability to process 2 or more responses. The ability to react to 2 or more demands simultaneously (multi-tasking).
- ▶ Selective attention: The ability to select from a variety of options and focusing on just one, filtering others.
- ▶ Alternating attention: The ability to switch focus back and forth between stimuli that require different cognitive processes.

Orlando L. Villegas, Ph.D.

Attention Problems

Inattention: The “inability” to pay attention (even when we want to pay attention)

Inability: Lack of sufficient power, capacity, strength, or means to accomplish some end.

Orlando L. Villegas, Ph.D.

Inattention blindness

- ❖ Also known as perceptual blindness, is a psychological lack of attention and is not associated with any visual defects or deficits.
- ❖ It may be further defined as the event in which an individual fails to recognize an unexpected stimulus that is in plain sight.

Orlando L. Villegas, Ph.D.

Distractibility

Distractibility: The degree of concentration and paying attention displayed when a person is not particularly interested in an activity (*).

Distraction: Diversion (to turn in another direction) of the attention caused by factors related to motivation, lack of interest, lack of caring or concern, or deliberate neglect (*).

(*) In Webster's Medical Dictionary 2015. Springfield, MA: Merriam-Webster, Inc. On-line edition

Orlando L. Villegas, Ph.D.

The positive aspects of “distractibility”

- + Becoming productive
- + Increasing imagination
- + Relaxation
- + Making room for more input

Orlando L. Villegas, Ph.D.



Orlando L. Villegas, Ph.D.

According to a research at Cambridge University, it doesn't matter in what order the letters in a word are, the only important thing is that the first and last letter be at the right place. The rest can be a total mess and you can still read it without problem. This is because the human mind does not read every letter by itself, but the word as a whole.

Inattention and distractibility

- ▶ I can be inattentive and this may cause distractibility
- ▶ I can be distracted but having an appropriate attention span (when the activity is interesting to me).

Orlando L. Villegas, Ph.D.

TEST : Inattention or distractibility ?



Distractibility



Inattention



Inattention or distractibility



Distractibility

Orlando L. Villegas, Ph.D.

Attention-Deficit Hyperactivity Disorder

- ▶ **DSM-5:**
 - ▶ A persistent pattern of "inattention" and/or "hyperactivity-impulsivity" that interferes with functioning or development.
 - ▶ Several symptoms of "inattention" and/or "hyperactivity-impulsivity" are present prior to age 12.
 - ▶ Clear evidence that symptoms interfere with, or reduce the quality of social, academic, or occupational functioning.
 - ▶ Symptoms do not occur exclusively during the course of schizophrenia or another psychotic disorder and are not better explained by another mental disorder (e.g. mood disorder, anxiety...)

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Orlando L. Villegas, Ph.D.

Attention-Deficit Hyperactivity Disorder

- ▶ **F90.2: Combined presentation:**
 - ▶ Six or more symptoms of both inattention and hyperactivity-impulsivity for the past 6 months
- ▶ **F90.0: Predominantly inattentive presentation:**
 - ▶ Six or more symptoms of inattention. Does not meet "hyper-impul." criteria for the last 6 months
- ▶ **F90.1: Predominantly hyperactive-impulsive presentation:**
 - ▶ Six or more symptoms of "hyper-impul". Does not meet inattention criteria for the last 6 months.

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Orlando L. Villegas, Ph.D.

Attention-Deficit Hyperactivity Disorder

In the DSM-5 "Inattention" manifests behaviorally as:

- ▶ Wandering off tasks (Orienting)
- ▶ Lacking persistence (Maintaining)
- ▶ Having difficulties sustaining focus (Focusing)
- ▶ Being disorganized

Not due to defiance or lack of comprehension

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Orlando L. Villegas, Ph.D.

Autism Spectrum Disorder

In the DSM-5 :

- Persistent deficit in social communication and social interaction across multiple contexts.
- Restrictive, repetitive patterns of behavior, interest, or activities, as manifested by at least two of the following, currently or by history:
 - Stereotyped or repetitive motor movements
 - Insistence on sameness, inflexible adherence to routines
 - Highly restrictive, fixated interests that are abnormal in intensity or focus
 - Hyper- or hypo reactivity to sensory input or unusual interest in sensory aspects of the environment.

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.
Orlando L. Villegas, Ph.D.

Autism Spectrum Disorder Joint Attention

- Joint attention refers to the adoption of a common point of reference with other people.
- Infants learn to share information and experiences with other people by coordinating their visual, auditory, or tactile attention on objects or events with these people.
- Involves coordinating attention with other people to the external world which leads to the emergence of the capacity to socially coordinate attention to internal mental objects in later infancy.

Mundy, Peter (2016). Autism and Joint Attention: Development, Neuroscience, and Clinical Fundamentals. New York: The Guilford Press.
Orlando L. Villegas, Ph.D.

Autism Spectrum Disorder Joint Attention

- This cognitive capacity for joint attention, and adopting a common point of reference, is fundamental:
 - to learning language
 - developing cooperative behavior
 - social-cognitive development.
- It is fundamental to our sense of social relatedness and interaction when it is accompanied by the perception of sharing meaning and experience with another person.

Mundy, Peter (2016). Autism and Joint Attention: Development, Neuroscience, and Clinical Fundamentals. New York: The Guilford Press.
Orlando L. Villegas, Ph.D.

Intellectual Disability (Intellectual Developmental Disorder)

In the DSM-5 :

- Is a disorder with onset during the developmental period that includes both intellectual and adaptive functioning deficits in conceptual, developmental and practical domains.
 - Intellectual deficits in reasoning, problem solving, planning, abstract thinking, judgement, academic learning and learning from experience.
 - Deficits in adaptive functioning that result in failure to meet developmental and socio-cultural standards for personal independence and social responsibility.
- “Global Developmental Delay” (under 5)
- “Unspecified Intellectual Disability” (over 5)

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.
Orlando L. Villegas, Ph.D.

Intellectual Disability (Intellectual Developmental Disorder)

- “The relationship between attention and intelligence is usually considered as the relationship between a basic ability and a complex ability in the sense that attention is a source, determinant or constituent of intelligence.”

Schwartz, K. (2010). The relationship of attention and intelligence. In Handbook of Individual Differences in Cognition, Attention, Memory and Executive Control, Chapter 15, (247-262). Aleksandra Gruska, Gerald Matthews & Blazaj Szymura (Eds.).

Orlando L. Villegas, Ph.D.

ADHD and autism

- The DSM IV prohibited the co-diagnosis of ADHD and ASD.
- The DSM 5 recognizes the possibility of co-existence of both disorders
- “Because of the high frequency of ADHD symptoms in autism, children with autism may be initially misdiagnosed with ADHD” (1)
- Children with autism spectrum disorder (ASD) often present similar symptoms (to those in ADHD) and may receive a diagnosis of ADHD first (2)

(1) Dickerson, M., Calhoun, S., Mayes, R., & Molitoris, S. (2012). Autism and ADHD: Overlapping and discriminating symptoms. *Research in Autism Spectrum Disorders*, 6 (1), 257-285.
(2) Miodonik, A., Harstad, E., Sideridis, G., & Huntington, N. (2015). Timing of the diagnosis of Attention Deficit Hyperactivity Disorder and Autism Spectrum Disorder.

Orlando L. Villegas, Ph.D.

ADHD and autism



- In ADHD social dysfunction is basically due to impulsive behavior.
- In ASD social dysfunction comes from social disengagement and indifference to social cues.




Orlando L. Villegas, Ph.D.

ADHD and autism



- In ADHD temper tantrums come as a result of poor control.
- In ASD temper tantrums results from intolerance to changes or sensory overload.

Orlando L. Villegas, Ph.D.

ADHD and autism

- In ADHD the individual experiences attention problems defined as the "inability" to pay attention (when he/she wants to pay attention).
- In ASD the individual may be hyper focusing on a situation while distracting from others. More than "inability", there is a preference for not paying attention (distraction)

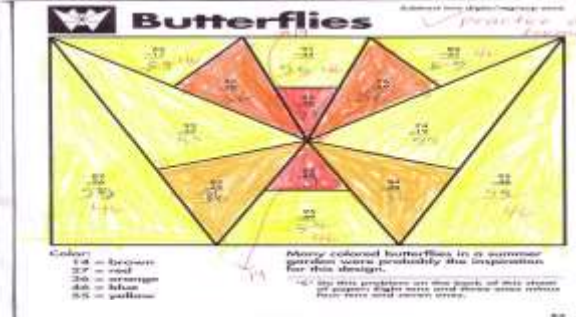
Orlando L. Villegas, Ph.D.

ADHD plus autism

- In ADHD plus ASD the individual experiences more impairment in sustained attention.
- In ASD the individual "experiences more problems" (?) with divided attention.

Sitzig, J., Bruning, N., Morsch, D & Lehmkuhl (2008). Attention profiles in autistic children with and without comorbid hyperactivity and attention problems. Acta Neuropsychiatrica 20, 207-215.

Orlando L. Villegas, Ph.D.



Orlando L. Villegas, Ph.D.

ADHD and autism:

- "Pathological Demand Avoidance" or PDA, syndrome associated to the ASD describes a profile of obsessive resistance to everyday demands and requests. Usually includes "socially manipulative" behavior, and even outrageous or embarrassing acts that are follow by a lack of concern for their effects. Distractibility plays a significant role in PDA.
- ADHD indicates an "inability" to pay attention, even when the activity/situation may be of interest for the individual.

Orlando L. Villegas, Ph.D.

ADHD and intellectual disability

- ▶ "Symptoms of ADHD are common among students placed in academic settings that are inappropriate to their intellectual ability....the symptoms are not evident during non-academic tasks" (1)

(1) American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Orlando L. Villegas, Ph.D.

ADHD and intellectual disability

- ▶ ADHD
 - ▶ When attention problems get under control...performance increases to a normal level
- ▶ Intellectual Disability
 - ▶ When attention problems get under control...performance remains low

Orlando L. Villegas, Ph.D.

ADHD and intellectual disability

- ▶ Low IQ + ADHD (when attention problems get under control) results in a attention span that it is still below expectations.
- ▶ "A diagnosis of ADHD in intellectual disability requires that inattention...be excessive for mental age" (1).
- ▶ Attention span for learning = chronological age + 1
 - 5 year old = 6 minutes
 - 6 year old = 7 minutes
 - 7 year old = 8 minutes
 - 10 year old = 11 minutes

(1) American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Orlando L. Villegas, Ph.D.

Intellectual disability and autism

- ▶ "Intellectual disability and autism spectrum disorder covary at very high rates...greater severity of one of these...appears to have effects on the other...(1)
- ▶ Approximately 10% of individuals with intellectual disability have autism. A larger portion of children with autism have intellectual disabilities.

(1) Matson, J., and Shoemaker, M. (2009) Intellectual disability and its relationship to autism spectrum disorders. *Research in Developmental Disabilities, 30* (6), 1107-1114.

Orlando L. Villegas, Ph.D.

Intellectual disability and autism

- ▶ In Intellectual disability the attention functions are performing below expectation for chronological age. Attention performance is consistently low.
- ▶ In Autism the effectiveness of the attention functions are related to interest by the individual in the situation. Attention performance is significantly irregular with highs and lows.

Orlando L. Villegas, Ph.D.

Inattention due to anxiety

- ▶ "Fear" is the emotional response to real or perceived imminent threats, whereas "anxiety" is anticipation of future threats (1)
- ▶ During episodes of anxiety, the attention is concentrated around the anticipated threat and removed from other situations/objects considered as less important.

(1) American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Orlando L. Villegas, Ph.D.

Inattention due to depression

- ▶ Along with the presence of sadness, feelings of emptiness or irritability, depressive disorders are accompanied by somatic and “cognitive changes” that significantly affects the individual’s capacity to function.
- ▶ Markedly diminished interest or pleasure in all, or almost all, activities most of the time, nearly everyday.
- ▶ Diminished ability to think or concentrate.....

Orlando L. Villegas, Ph.D.

Inattention due to a bipolar disorder

- ▶ In Manic Episodes: “Distractibility” (attention drawn to unimportant or irrelevant external stimuli).
- ▶ In Hypomanic Episodes: : “Distractibility”
- ▶ In Major Depressive Episodes: “Diminished ability to think or concentrate”

Orlando L. Villegas, Ph.D.

Inattention and TBI

- ▶ Children diagnosed as having ADHD before TBI are going to present more severe and persistent ADHD symptoms than those who were with out symptoms before a head injury.

Levin H, Hanten G, Mak J, Li X, Swank P, Ewing Cabbo L, et al. (2007). Symptoms of attention-deficit/hyperactivity disorder following traumatic brain injury in children. Journal of Developmental Pediatrics, 28, 108-18.

Orlando L. Villegas, Ph.D.

Inattention due to a medical condition

- ▶ Graves disease: (hyperthyroidism)
 - “Short attention span”
 - Motor hyperactivity
 - Emotional disturbance
 - Irritability

Orlando L. Villegas, Ph.D.

ADHD	AUTISM	COG. DISABILITY
Inability to pay attention	Lack of interest in paying attention	Attention correlates with “interest”
Non productive “shifting”	Significant deficit in “shifting”	“Shifting” is not necessarily affected
Attention usually improves with behavioral strategies and medication	Prompts, routines and environmental modifications improve distractibility	For “moderate” and lower levels to implement similar suggestions to those for ASD

Orlando L. Villegas, Ph.D.

ADHD + ASD	ASD + Cog. Dis.	ADHD + Cog. Dis.
Greatest impairment in sustained attention	Greatest impairment in divided attention	The lower the cognitive level, the more intense the attention problems
Distractibility and attention problems co-exist	Distractibility and attention problems co-exist	Distractibility and attention problems co-exist
Once ADHD is under control, distractibility persists	If distraction gets under control, attention impairment persists	Degree of inattention correlates with severity of cognitive disability

Orlando L. Villegas, Ph.D.



**Thank
You!!!**

Orlando4psy@hotmail.com