Current Trends in the Understanding, Evaluation and Educational Care of Students with ADHD

- ⊕ <u>www.samgoldstein.com</u>
- info@samgoldstein.com
- @drsamgoldstein@doctorsamgoldstein



Disclosure

- My expenses for this talk are supported by Multi-Health Systems.
- I have developed tests marketed by Multi-Health Systems, Pro-Ed and Western Psychological Services.
- I have authored books marketed by Springer, Wiley, Guilford, Double Day, McGraw Hill, Brookes, Kluwer and Specialty Press.
- I am Editor in Chief of the Journal of Attention Disorders (Sage) and Co-Editor of the Encyclopedia of Child Development (Springer)



What is ADHD?

- ADHD appears to primarily involve the basal ganglia, cerebellum and the frontal lobes.
- Co-morbidity of other developmental, emotional and behavioral conditions with ADHD probably confounds findings from different study groups. (Hendren et al, 2000)
- The symptoms of ADHD lead to a nearly infinite number of consequences (Barkley, 2015).

Current diagnostic criteria specify that ADHD involves difficulties with inattention and/or hyperactivity/impulsivity. Researchers using factor analysis have consistently found support for an inattention factor in both children and adults. Findings have been mixed regarding whether hyperactivity and impulsivity reflect one or two dimensions.

The prediction of outcomes provided support that complemented confirmatory factor analysis for the separation of the hyperactivity and impulsivity constructs. Impulsivity uniquely predicted more outcomes than hyperactivity alone. Results were consistent with the conceptualization of ADHD as primarily a disorder of behavioral inhibition. Future research using alternative outcomes and clinical populations should be conducted. (JAD, 2012)

Examining the Dimensionality of ADHD Symptomatology in Young Adults Using Factor Analysis and Outcome Prediction

ADHD appears to be a condition stemming in part from inefficient operation of the brain relative to task and environmental demands leading to poor execution of behavior.

Current Challenges

- Faking ADHD for secondary gain. <u>http://exileonline.com</u>
- Current adult rates over 50% continue from childhood.
- Thirty percent increase in the rates of diagnosis in the past 8 years.
- Prescription increase of 25% for teens and 50% for adults in the past 8 years.



mom and dad I love you more than you know. to: Momanddad from: Your son, clayton

Neither the level of impairment nor the life outcome for those individuals with ADHD is very well predicted by the diagnosis, symptoms or treatments for the condition.

Symptom relief is necessary but far from sufficient to assure good adult outcome for ADHD.

Caregivers are the architects of the way in which experience influences genetically preprogrammed but experience dependent brain development.

> Daniel Siegel The Developing Mind

The Symptoms of ADHD Lead to a Nearly Infinite Number of Consequences

ADHD acts as a catalyst fueling other developmental and environmental risk factors.

What is ADHD?

ADHD is a bio-psychosocial condition characterized by core symptoms of inattention, hyperactivity and impulsivity leading to/interacting with cognitive deficits causing impairment in all walks of life.

16

ADHD is a condition resulting from poor self-discipline. It reflects exaggeration of normal behavior.

Self-discipline

- The ability to inhibit
- The ability to delay
- The ability to separate thought from feeling
- The ability to separate experience from response
- The ability to consider an experience and change perspective
- The ability to consider alternative responses

Self-discipline

- The ability to choose a response and act successfully towards a goal
- The ability to change the response when confronted with new data
- The ability to negotiate life automatically
- The ability to track cues

Children with poor selfdiscipline aren't clue-less

They are unfortunately often cue-less!

Poor Self-discipline is synonymous with...

Poor Self-control

Poor self-discipline leads to. . .

Impulsive behavior

Conditions under which inattention is observed

Repetitive

- Effortful
- Uninteresting
- Not chosen

Conditions under which problems with consequences are observed

Delayed

- Infrequent
- Unpredictable
- Lacking saliency

Adopt a learning to ride a bike mindset!

What do we mean by the term Executive Function(s)?

How is ADHD related to EF?

What is Executive Function(s)

There is no formal excepted definition of EF

We typically find a vague general statement of EF (e.g., goal-directed action, cognitive control, top-down inhibition, effortful processing, etc.).

- Or a listing of the constructs such as

 Inhibition,
 Working Memory,

 - Planning,
 Problem-Solving,
 Goal-Directed Activity,
 - Strategy Development and Execution,
 Emotional Self-Regulation,
 Self-Motivation

27

Does Experience Shape EF? The Family Life Project has demonstrated that poverty is associated with elevated cortisol in infancy and early childhood. This association is mediated through characteristics

- Inis association is mediated through characteristics of the household.
- Parenting sensitivity mediates the relationship between poverty and stress physiology.
- In combination parenting sensitivity and elevated cortisol mediate the association between poverty and poor EF in children.



What Neural Activities Require EF?

- Those that involve planning or decision making.
- Those that involve error correction or troubleshooting.
- Situations when responses are not well-rehearsed or contain novel sequences of actions.
- Dangerous or technically difficult situations.
- Situations that require the overcoming of a strong habitual response or resisting temptation.

Goldstein, Naglieri, Princiotta, & Otero (2013)

• We found more than 30 definitions of EF(s).

 Executive function(s) has come to be an umbrella term used for many different abilities, including planning, working memory, attention, inhibition, self-monitoring, self-regulation and initiation carried out by pre-frontal areas of the frontal lobes.

,

cophine processes. It is also indirect to as the executive function, supervisery attentional system, cognitive control in the executive functions, supervisery attentional system, cognitive control in the executive function. The concept in used by psychologism and neuroscientists to describe a loosely defined collection of train processes which we responsible of practice, quarks function, capable feedbilly, dutate thirking, on a sequinition, initiaring many.	KINFEDIA Kine encloses Kine encloses Kine encloses Kine encloses Kine encloses Kine encloses Kine encloses	
There mayness has been declared The many set of the declared and the set of the declared and the de	From Watgeda, The The encyclopeda (Refereded from Executive Function)	
WINETERPATATION To associate specific and specific approximation of an exact specific approximation of a specific approximation of approximation	VIKIPEDIA	
The case is a second se		Psychology
tenerormania The executive system is a subscription of the system in psychology that control and manages of cognitive processes. It is also referred to as the security function, executive functions, support attentional system, or cognitive control.	lain page attentional system, or cognitive control.	Ψ
cognitive processes. It is also referred to as the executive function, executive functions, super- attentional system, or cognitive control.	entired content processes which are responsible for planning, cognitive flexibility, abstract thinking, rule acquisition, initiation	g History of psychology Branches of psychology
attentional system, or cognitive control.		
		ons, supervisory
	,	
processes which are responsible for planning, cognitive flexibility, abstract thinking, rule acquisition		
appropriate actions and inhibiting inappropriate actions, and selecting relevant sensory information.		nformation.
* What links here 12 External links sch		
	Citations needed That links here It2 Extensal links	across- aport





And Finally. . . . •An NICHD panel in 1994 identified 33 EFs by consensus!

33

The Top Six Were:

- Self-regulation
- Sequencing of behavior
- Flexibility
- Response inhibition
- Planning
- Organization of behavior

What is the relationship of EF to ADHD and other defined disorders?

24

35

EF and ADHD

EF deficits are not necessarily unique to ADHD. They are neither necessary nor sufficient to make a diagnosis of ADHD. When EF impairments are measured in children with ADHD they tend to reflect specific rather than global impairments.

Conditions and Disorders That Have Demonstrated EF Impairments

Depression – sense of helplessness and hopelessness.

- Anxiety lack of confidence in predicting outcome.
- ADHD Immaturity in developing effective self-
- discipline.
- Oppositional and Conduct Disorders noncompliance and rule violation.
- Autism social learning impairment.
- Learning Disability delayed acquisition of academic knowledge despite good instruction.

An examination of older factor analytic studies examining EF in children finds only a single factorplanning – common to all studies.

> Anderson, 2002 Clin. Neuropsych.

> > 38

Executive Function(s)

Given all these definitions of EF(s) we wanted to address the question...

Executive Functions ... or Executive Function?

CEFI Standardization

- Sample was stratified by
 - Sex, age, race/ethnicity, parental education level (PEL; for cases rated by parents), geographic region
 - Race/ethnicity of the child (Asian/Pacific Islander, Black/African American/African Canadian, Hispanic, White/Caucasian, Multi-racial by the rater
 - Parents provided PEL of both parents
 - The higher of the two levels was used to classify the parental education level of the child.
 All raters completed the questionnaire via paper-and-pencil or online methods.

ITEM FACTOR ANALYSES – PART 1

- For the *first half* of the normative sample for Parent, Teacher and Self ratings' **item scores** (90 items) was analyzed using exploratory factor analysis
- The *scree plots* and the *very simple solution* criterion both indicated that only **one factor**.
- The *ratio of the first and second eigenvalues* was greater than four for all three forms, which indicated a **one factor solution.**





SCALE FACTOR ANALYSES - PART 2

- Using the second half of the normative sample EFA was conducted using raw scores for the Attention, Emotion Regulation, Flexibility, Inhibitory Control, Initiation, Organization, Planning, Self-Monitoring, and Working Memory scales
- Both the Kaiser rule (eigenvalues > 1) and the Eigenvalue Ratio criterion (> 4) unequivocally indicated **one factor**.



EXPLORATORY FACTOR ANALYSES

Conclusions

[•] When using parent (N = 1,400), teacher (N = 1,400), or self-ratings (N = 700) based on behaviors observed and reported for a nationally representative sample (N = 3,500) aged 5 to 18 years Executive Function *not* functions is the best term to use.



Latent class analysis of frontal lobe tasks strongly suggests a general EF that reflects the efficiency and perhaps automaticity of the executive management system.

> Miyake, Friedman, et al Cognitive Psychology

Conclusive evidence concerning the developmental trajectories of the different EF components on neuropsychological tests has yet to be established.

> Huizinga, Dolan et al, 2006 Neuropsyhologica

An examination of factor analytic studies examining EF in children finds only a single factor- planning – common to all studies.

Anderson, 2002 Clin. Neuropsych.

EF skills may develop in different tracks but merge in function as children develop.

Wasserman and Wasserman, 2013 Applied Neuropsych. Child

50

EF appears to be a unitary, more domain specific process in children

Wiebe, Scheffield, et al, 2011 J. Of Exp. Child Psych.

EXPLORATORY FACTOR ANALYSES

- Conclusions
 - When using parent (N = 1,400), teacher (N = 1,400), or self-ratings (N = 700) based on behaviors observed and reported for a nationally representative sample (N = 3,500) aged 5 to 18 years Executive Function *not* functions is the best term to use.



CEFI Scores by Diagnosis

- We expected that individuals with ADHD, mood disorders, and Autism Spectrum Disorders might earn a low scores on this measure of EF behaviors.
- We compared groups matched on gender, race/ethnicity, and parental education

Impairment in executive Function is common in a number of internationag and externationag forms of psychopharology (Villicit et al., 2005; see chapter 2, Thoroy and Research, for further discussion). For strainance, research and there y has pointed to executive function deficis in Alterian Spectrum Disorder (ADHD) and mood disorders (e.g., 2008; Weight et al., in press), as well as Autism Spectrum Disorders (ASD, e.g., Gibern, Bind, Bindyer, Frith, & Burgese, 2008; Gibry, Kennerdy, Tsan, Binda, K. Wagner, 2002; Happé Bord, Charlon, & Hughes, 2009; Ozonetf, Persington, & Rogers, 1091; Solomon, Ozonetf, Usu, Ravizza, Cummings, Ly, & Canter, 2009).

















How Important is EF?

I

- \bullet Data from the Neurology, Learning and Behavior Center in Salt Lake City, UT
- Children given the CEFI, WISC-IV (N = 43), CAS (N = 62), and the WJIII achievement (N = 58) as part of a typical test battery.

			WJ-III Achiev	ement Te	sts		
\bigcirc	CEFI Scales	Total	Broad Reading	Broad Math	Broad Written Language	Median	
\smile	Full Scale	.51	.48	.49	.47	.49	
	Attention	.59	.52	.46	.55	.54	
	Emotion Regulation	.18	.27	.15	.17	.18	
	Flexibility	.61	.50	.55	.54	.55	
	Inhibitory Control	.23	.32	.15	.26	.25	
	Initiation	.32	.26	.38	.28	.30	
	Organization	.32	.31	.33	.33	.33	
	Planning	.58	.54	.57	.50	.56	
	Self-Monitoring	.53	.51	.51	.49	.51	
	Working Memory	.57	.48	.60	.47	.53	
		p < .05	p < .01				







			CAS				
	FS	Plan	Sim	Att	Suc	C	FI
CEFI 20%!!						Mn	SD
Full Scale	.45	.49	.43	.37	.32	91.4	13.2
Attention	.40	.42	.39	.30	.35	90.3	12.8
Emotion Regulation	.26	.22	.23	.24	.13	96.9	14.7
Flexibility	.52	.54	.51	.40	.42	92.2	13.0
Inhibitory Control	.27	.29	.22	.18	.21	96.0	13.9
Initiation	.40	.37	.31	.30	.20	89.0	16.3
Organization	.29	.36	.21	.20	.23	90.5	14.3
Planning	.47	.54	.46	.37	.38	92.5	12.4
Self-Monitoring	.48	.50	.49	.43	.35	91.2	12.4
Working Memory	.48	.46	.45	.38	.30	91.0	14.0
CAS Mn	95.8	92.4	101.6	96.5	98.0		
CAS SD	17.1	14.5	17.0	15.1	14.6		

Critical Issues in Assessment

- Demographics
- Symptoms vs. Consequences
- Developmental pathways: accept a moment in time
- Assess the environment
- Categories vs. Dimensions

Critical Issues in Assessment

- Assess for intervention
- There are no shortcuts
- Understand sensitivity vs. specificity
- Positive vs. negative predictive power
- Begin with the disruptive/non-disruptive continuum
- Keep low incidence disorders in mind
- Resilience factors

Resilience Factors

- Family factors
- Socioeconomic status
- Easy temperament
- Social relations
- Sense of self esteem
- Organized religion
- Internal locus of control
- Sense of humor

Comorbidity Issues in ADHD

- Two types of Oppositional Defiant Disorder
- Conduct Disorder
- Emerging personality disorders
- Dysthymia/Depression
- Anxiety Disorders
- Manic Depressive Disorder
- Learning/Social/Language Disorders

Low Incidence Disorders With Increased Risk of ADHD

- Tourette's Syndrome
- Autism
- Fragile X Syndrome
- Williams Syndrome
- Neurofibromatosis Type I

Comorbid Disorders in Clinic Settings

- Major Depressive Episode +25%
- Mania 3-17%?
- Anxiety Disorder 20-30%
- Learning Disability 20-30%
- School Problems 100%?
- Social Problems 100%?

Comorbid Disorders in Clinic Settings

- Oppositional Defiant Disorder 50-70%
- Conduct Disorder 30-40%
- Juvenile Court Involvement 25-50%
- Substance Abuse 20-30%

Treatment For ADHD





















Make the Work More Interesting Than the Walls?















Faith?



Key Goals of Intervention

- Instill hope and empowerment
- Educate
- Reframe
- Build self-esteem and self-acceptance

Key Goals of Intervention

- Form a partnership
- Reduce discouragement through setting realistic goals
- Address and rewrite negative scripts
- Focus on strengths
- Build resilience

Medical Interventions for ADHD

- Cognitive enhancing medications.
- Mood regulating medications.
- Sedating medications.

They are/can be effective symptom relievers but they may not change long term outcome.

Pills will not substitute for skills

But they will relieve symptoms

The Ideal Mindset of Children Taking Medication For ADHD

- Pills won't substitute for skills
- Active participation in treatment
- I am a person with ADHD not an ADHD person
- A mixed locus of control
- I am important
- I can make a contribution









Is Counseling for ADHD Non-Traditional?

- Active role of therapist
- Cognitive behavioral model
- Similar to working with individual's with neurological conditions. Therapist takes an active even directive role.
- Involve support system
- Offer guidance and advice.







Five keys to successful management of ADHD

- Make tasks interesting
- Make payoffs valuable
- Adjust expectations for change
- Allow more trials to mastery
- Allow more time for change

Aaron's treatment plan for school success

• Sit still

- Don't talk
- Get control of yourself
- Do your work
- Never make a mistake!

Treatment Plan For ADHD

- Adult Education
- Thorough assessment
- Medication
- Behavior management
- Educational support
- Long term perspective
- Build success in small steps
- Focus on resilience

Five Strategies To Foster a Resilient Mindset

- Teach empathy by practicing empathy.
- Teach responsibility by encouraging contributions.
- Teach decision making and problem solving skills that foster self-discipline.
- Offer encouragement and positive feedback.
- Help children deal with mistakes.

Teach Empathy By Practicing Empathy

- Are we saying or acting in a way that our children will be responsive to hearing us?
- Would we want anyone to speak to us the way we speak to our children?
- How would our children describe us at various times?
- How would we want our children to describe us?

Teach Empathy By Practicing Empathy

• Listen

- Validate
- Avoid preaching and lecturing
- Avoid judgments and accusations
- Put yourself in their shoes
- Change your negative scripts

Teach Responsibility By Encouraging Contributions

- Provide ample opportunity
- Focus on existing success
- Build islands of competence
- Allow the opportunity to witness concrete examples of success

Teach Decision Making and Problem Solving Skills That Reinforce Self-Discipline

- What's my problem?
- What solutions are available?
- Which solution is the best?
- How can I implement each step of the solution?
- How did I do?

Offer Encouragement and Positive Feedback

- Become a charismatic adult
- Provide realistic appreciation
- Focus on building rather than tearing down
- Be available

Help Children Deal With Mistakes

- The fear of mistakes is a strong roadblock to developing a resilient mindset
- Mistakes are opportunities to learn
- Model the benefits of mistakes

The Mindset of a Resilient Youth

- Optimistic and hopeful.
- Feel special and appreciated in the eyes of others.
- Set realistic goals and expectations.
- View mistakes, hardships and obstacles as challenges.
- Solve problems and make decisions.
- Internal locus of control.
- Believe you can and set out to solve problems.
- Possess empathy.



Psychosocial Interventions for ADHD

- Environmental manipulation of the physical plant
- Environmental manipulation of consequences
- Modification of cognitive function


Symptom relief is not synonymous with changing long term outcome.

Adopt a learning to swim mindset!

Problem Solving Method

- What is my problem?
- What options do I have ?
- What is the best option?
- How do I implement that option?
- Did I achieve my goal?

Myrna Shure, Raising a Thinking Child

Types of Parenting Styles: Families Are Complicated!



Parents perceive their temperamentally similar children as different, that is they foster a negative bias.

Journal of Personality and Social Psych. Vol. 35 #5

Lower family stress is tied to improved child behavior, particularly externalizing problems.

Developmental Psychology Vol.40 #3

Parenting Children With ADHD

- Become educated about the condition
- Become an educated consumer
- Manage consequences effectively
- Utilize response cost
- Build islands of competence
- Maintain a positive relationship
- Take care of yourself
- Think long term

Critical Issues For Teens With ADHD

- A workable system for medication
- A family systems approach
- Defined limits
- Negotiable and non-negotiable issues
- Effective communication
- Consider Robin's model for teens with ADHD (a r
- Guilford text)



Intervening Factors

- Parent's stress
- Parent's mindset
- Parent's involvement with child
- Child's involvement with siblings
- General disobedience
- Social problems

Intervening Factors

- Child's poor problem solving skills
- Child anger
- Academic problems
- Low self-esteem
- Emotional problems
- Disruptive behavioral problems

Will counseling reduce the symptoms of ADHD?

NO BUT IT CAN ADDRESS THE CONSEQUENCES OF LIVING WITH A DISABLING CONDITION.

Counseling Issues

- Self-esteem: Finding an island of competence
- Developing a balanced locus of control
- Actively participating in treatment
- Addressing mindset about taking medication
- Learning problem solving and self-control strategies
- Dealing with comorbid emotional issues
- Developing anger management skills



Structure, Stimulation, Repetition or Novelty?







What Qualities Define the Best Teacher For Students With ADHD?

Qualities That Define the Best Teacher For All Students!

"Make the work interesting and the discipline will take care of itself"

E. B. White

What teachers want from children with ADHD

- •TO THINK
- TO START
- TO STOP in concert with all students

Keys for the Education of Children With ADHD

- MAKE TASKS INTERESTING
- MAKE PAYOFFS VALUABLE
- ALLOW MORE TRIALS OVER LONGER TIME PERIODS
- FOCUS ON ASSETS
- ADOPT A LONG TERM PERSPECTIVE

Cognitive Strategies For the Classroom

- Monitoring
- Evaluation
- Cuing
- Problem solving
- Communication
- Attribution

- Adjust expectations
- Everyone succeeds every day
- Prepare for changes
- Seating in rows
- Incompetence versus non-compliance
- Mix high and low interest tasks
- Simple, single directions



Management Strategies For the Classroom

- Transitions
- Consequences
- Consistent routine
- Allow non-disruptive movement
- Teacher contact
- Ignore minor disruptions
- An efficient system for homework

- Manage negative reinforcement
- Use response cost
- Use differential attention
- State and review rules
- Predictable schedule
- Maintain home-school communication
- Don't be a martyr





What Qualities Define the Best Teacher For Students With ADHD?

 Qualities That Define the Best Teacher For All Students!

Some Qualities of Good Teachers

Empathic

- Communicate Well
- Seek the best in every student
- Focus on strengths not weaknesses
- Make children feel welcome in the classroom
- Educate enthusiastically
- Seek to understand before being understood
- Change methods not students

"Make the work interesting and the discipline will take care of itself"

E. B. White





What teachers want from children with ADHD

- •TO THINK
- TO START
- •TO STOP in concert with all students

Keys for the Education of Children With ADHD

- MAKE TASKS INTERESTING
- MAKE PAYOFFS VALUABLE
- ALLOW MORE TRIALS OVER LONGER TIME PERIODS
- FOCUS ON ASSETS
- ADOPT A LONG TERM PERSPECTIVE

Cognitive Strategies For the Classroom

- Monitoring
- Evaluation
- Cuing
- Problem solving
- Communication
- Attribution

- Adjust expectations
- Everyone succeeds every day
- Prepare for changes
- Seating in rows
- Incompetence versus non-compliance
- Mix high and low interest tasks
- Simple, single directions



Management Strategies For the Classroom

- Transitions
- Consequences
- Consistent routine
- Allow non-disruptive movement
- Teacher contact
- Ignore minor disruptions
- An efficient system for homework

- Manage negative reinforcement
- Use response cost
- Use differential attention
- State and review rules
- Predictable schedule
- Maintain home-school communication
- Don't be a martyr

Management Strategies For the Classroom

- Manage negative reinforcement
- Use response cost
- Use differential attention
- State and review rules
- Predictable schedule
- Maintain home-school communication
- Don't be a martyr

Cognitive Strategy = EF Instruction

- A strategy is a procedure that the learner uses to perform academic tasks
- Using a strategy means the child thinks about 'how you do what you do'
- Successful learners use many strategies.
- Some of these strategies include visualization, verbalization, making associations, chunking, questioning, scanning, using mnemonics, sounding out words, and self-checking and monitoring.

147



