Behavioral Assessment of Youth: Where Comorbidity is the Norm, Not the Exception

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Disclosure
- I have developed tests marketed by Multi-Health Systems, Pro-Ed and Western Psychological Services.
- I am Editor in Chief of the Journal of Attention Disorders (Sage) and Co-Editor of the Encyclopedia of Child Development (Springer)
- I am compensated for this Webinar by NHASP

Learning Objectives For the Two Webinars
I Had a Revelation in St. Augustine

The world operates along a normal curve!

Not surprisingly all but two things we do as psychologists are dimensional!

- Diagnosis
- Eligibility Determination

The Disruptive Continuum of Behavior

- Difficult Temp.
- Attention Deficit
- Oppositional Defiance
- Conduct Disorder
The Non-disruptive Continuum of Behavior

Temperament & Development

Anxiety

Depression

Learning & Social Problems

How Shall We Understand, Define and Categorize Mental Illness and Developmental Problems?

• By etiology or cause?
• By emotions, abilities, behaviors and thoughts?
• By impaired function in activities of life?

Diagnosis

Medicine/Medical.

The process of determining by examination the nature and circumstances of a diseased condition.

The decision reached from such an examination.
Eligible

adj. Having the right to do or obtain something; satisfying the appropriate conditions.

"Customers who are eligible for discounts"

Synonyms: entitled, permitted, allowed, qualified, able

"Those people eligible to vote" (of a person) desirable or suitable as a partner in marriage.

"The world's most eligible bachelor"

Synonyms: desirable, suitable

Determining eligibility is an outcome best understood and obtained by a thorough assessment.

How distinct are these disorders from each other?

Much less so than makes me comfortable!
How Shall We Understand, Define and Categorize Mental Illness?

• By etiology or cause?
• By emotions, behaviors and thoughts?
• By impaired function in activities of life?

Co-Occurrence/Comorbidity

<table>
<thead>
<tr>
<th>Dx</th>
<th>ASD</th>
<th>ODD</th>
<th>CD</th>
<th>Anx</th>
<th>Dep</th>
<th>LD</th>
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<tbody>
<tr>
<td>ADHD</td>
<td>55%</td>
<td>47%</td>
<td>22%</td>
<td>35%</td>
<td>41%</td>
<td>45%</td>
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<tr>
<td>ASD</td>
<td>4% to 37%</td>
<td>1% to 10%</td>
<td>42%</td>
<td>1.4% to 38%</td>
<td>70%+</td>
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<tr>
<td>ODD</td>
<td>42%</td>
<td>62%</td>
<td>39%</td>
<td>55%+</td>
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How distinct are these disorders from each other?

Although the National Institute of Mental Health (NIMH) has prepared well for this undertaking, much remains to be done. Rigorous diagnostic procedures are available for some mental disorders, but not all. Studies to identify the genes that influence the onset of mental disorders have been initiated, but too few are large enough to efficiently detect these genes. Dedicated investigators are working on various aspects of mental disorders, but more researchers with training in molecular and statistical genetics are required [NIH, 1997].
How distinct are these disorders from each other?

For over a century, psychiatric disorders have been defined by expert opinion and clinical observation. The modern DSM has relied on a consensus of experts to define categorical syndromes based on clusters of symptoms and signs, and, to some extent, external validators, such as longitudinal course and response to treatment. In the absence of an established etiology, psychiatry has struggled to validate these descriptive syndromes, and to define the boundaries between disorders and between normal and pathologic variation.

Before the modern era of genomic research, family and twin studies demonstrated that all major psychiatric disorders aggregate in families and are heritable. Over the past decade, the success of large-scale genomic studies has confirmed several key principles: (1) psychiatric disorders are highly polygenic, reflecting the contribution of hundreds to thousands of common variants of small effect and rare (often de novo) SNVs and CNVs; (2) genetic influences on psychopathology commonly transcend the diagnostic boundaries of our clinical DSM nosology. At the level of genetic etiology, there are no sharp boundaries between diagnostic categories or between disorder and normal variation.

Comorbidity is the **RULE** not the Exception
Using the DSM 5: Training

- For teachers: https://www.youtube.com/watch?v=9OhVSh2Ymn8
- For School Psychologists:
  https://www.youtube.com/watch?v=bFRLr-8g2CU
  https://www.youtube.com/watch?v=0DUwB4TqOlK

What is the Goal of a Comprehensive Evaluation?

- Identify and define symptoms?
- Identify and define strengths and weaknesses?
- Appreciate the relationship of a set of symptoms to a unitary condition?
- Define limits of functional impairment to set a baseline for intervention?
Components of a Thorough Assessment

- History
- Broad Spectrum Questionnaires (Parent and Teacher)
- Impairment, Risk, Executive Functioning
- Narrow Spectrum Questionnaires (Parent and Teacher)
- Self report Questionnaires
- Ability Assessment
- Achievement Assessment
- Interview with student

General Guidelines for a Comprehensive Evaluation

- A distinction should be made between acute vs. chronic problems.
- Person and environment protective factors need to be understood.
- Assessment should be strength and risk focused.
- Test results should be presented in ways that are useful to consumers (e.g. family, school, etc.).
- The least amount of assessment needed to answer referral questions should be completed.

Person Attributes Associated With Successful Coping*

- Affectionate, engaging temperament.
- Sociable.
- Autonomous.
- Above average IQ.
- Good reading skills.
- High achievement motivation.
- Positive self-concept.
- Impulse control.
- Internal locus of control.
- Planning skills.
- Faith.
- Humorous.
- Helpfulness.

*Replicated in 2 or more studies.
Environmental Factors Associated With Successful Coping*

- Smaller family size.
- Maternal competence and mental health.
- Extended family involvement.
- Close bond with primary caregiver.
- Supportive siblings.
- Living above the poverty level.
- Friendships.
- Supportive teachers.
- Successful school experiences.
- Involvement in pro-social organizations.

*Replicated in 2 or more studies.

The pathways that lead to positive adaptation despite high risk and adversity are complex and greatly influenced by context therefore it is not likely that we will discover a magic (generic) bullet.

Determining eligibility is an outcome best understood and obtained by a thorough assessment.
Critical Issues In Assessment

• Demographics
• Symptoms vs. consequences
• Categories vs. dimensions
• Eligibility vs. diagnosis
• Developmental pathways: accept a moment in time
• There are no shortcuts
• Assess the environment

Critical Issues in Assessment

• Assess for intervention
• Understand positive and negative predictive power
• Understand sensitivity vs. specificity
• Begin with the disruptive/non-disruptive continuum
• Keep low incidence problems in mind
• Consider resilience (protective) factors
• Measure impairment

How the Brain Works
Ability, Knowledge and Skill

• Ability: Innate qualities unevenly distributed across the population.
• Knowledge: Acquired information through experience.
• Skill: A verb as in skillfully reading.
Why is the assessment of impairment critical to a comprehensive evaluation?

An exhaustive review of the literature demonstrates that the relationship between symptoms and functioning remains unexpectedly weak and often bidirectional (McKnight and Kashdan, 2009).

Impairment is the reduced ability to meet the demands of life because of a psychological, physical, or cognitive condition.
SYMPTOMS VS. IMPAIRMENT

Impairment is not the same as symptoms

- Symptoms are physical, cognitive, or behavioral manifestations of a disorder.
- Impairments are the functional consequences of these symptoms.

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Symptoms vs. Impairment

Impairment can exist absent of formal diagnosis. (Balazs et al., 2013; Wille et al., 2008)

In one study 14.2% of a sample of children were significantly impaired without a formal diagnosis. (Angold et al., 1999)

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Adaptive Behavior vs. Impairment

Skill vs. Performance

Do you know how to do it?
Do you actually do it?
Adaptive Behavior vs. Impairment

Using utensils

Not using utensils to eat

Symptoms vs. Impairment

Inattention

Difficulty completing homework

Rating Scale of Impairment (RSI) Forms

RSI (5-12 Years)
- Parent Form: 41 Items
- Teacher Form: 29 Items
- Total Score

RSI (13-18 Years)
- Parent Form: 49 Items
- Teacher Form: 29 Items
- Total Score
Relationship Between The RSI And Other Measures

- RSI and the Barkley Functional Impairment Scale (BFIS–CA)
  - Child Sample corrected $r = .55$ to .67
  - Youth Sample corrected $r = .63$ to .71
- RSI and the Children’s Global Assessment Scale (CGAS)
  - Corrected $r = -.34$ to -.51

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

- In 1966 Alexandr Luria first wrote and defined the concept of Executive Function (EF).
- He credited Bianchi (1895) and Bekhterev (1905) with the initial definition of the process.

What is/are 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

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 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.
What is Executive Function(s)

1. Barkley (2011): “EF is thus a self-directed set of actions” (p. 11).
2. Dawson & Guare (2010): “Executive skills allow us to organize our behavior over time” (p. 1).
3. Delis (2012): “Executive functions reflect the ability to manage and regulate one's behavior (p. 14).

5. Gioia, Isquith, Guy, & Kenworthy (2000): “A collection of processes that are responsible for guiding, directing, and managing cognitive, emotional, and behavioral functions” (p. 1).

6. Pribram (1973): “Executive programmes ...to maintain brain organization” (p. 301).
7. Roberts & Pennington (1996): EF “a collection of related but somewhat distinct abilities such as planning, set maintenance, impulse control, working memory, and attentional control” (p. 105).
What is Executive Function(s)

6. Stuss & Benson (1986): "a variety of different capacities that enable purposeful, goal-directed behavior, including behavioral regulation, working memory, planning and organizational skills, and self-monitoring" (p. 272).

7. Welsh and Pennington (1988): "the ability to maintain an appropriate problem-solving set for attainment of a future goal" (p. 201).

What is Executive Function(s)

10. McCloskey (2006): "a diverse group of highly specific cognitive processes collected together to direct cognition, emotion, and motor activity, including ...the ability to engage in purposeful, organized, strategic, self-regulated, goal directed behavior" (p. 1)

"think of executive functions as a set of independent but coordinated processes rather than a single trait" (p. 2).

What is Executive Function(s)

10. Lezak (1995): "a collection of interrelated cognitive and behavioral skills that are responsible for purposeful, goal-directed activity."

11. "how and whether a person goes about doing something" (p. 42).

12. Luria (1966): "... ability to correctly evaluate their own behavior and the adequacy of their actions" (p. 227).
Executive Functions

The executive system is a theoretical cognitive system in psychology that controls and manages other cognitive processes. It is also referred to as the executive function. Executive functions are highly individual differences in the ability to plan, perform, monitor, and self-regulate behavior. The executive system is involved in the control of attention, working memory, and cognitive flexibility.
And Finally...  

A NICHD panel in 1994 identified 33 EFs by consensus!

The Top Six Were:

- Self-regulation
- Sequencing of behavior
- Flexibility
- Response inhibition
- Planning
- Organization of behavior
Three Categories of Theories

- Regulators that control
- Abilities (cognitive processes)
- Behaviors

A similarly named ability and behavior (e.g., planning) may only overlap to a small extent in explaining outcome.

In fact, EF ability likely forms the foundation reflected in behavior, achievement, emotional regulation and socialization. The contributed variance likely is impacted by a host of other variables. Ability and knowledge interact with these variables to shape skillful behavior.
Are EF challenges associated with other psychiatric and developmental conditions?

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.

EF and Other Disruptive Disorders (ODD & CD)

Early reviews reported that EF deficits were not characteristic of children and adolescents with ODD and CD after co-morbid ADHD was factored out. More recent studies, however, suggest that inhibition deficits may be characteristic of both ADHD and CD but whether children with CD display impairments on additional EF measures is equivocal.
EF and Tourette’s

Distinct and robust impairments in EF do not appear to be characteristic of children with TD.

EF and Anxiety Disorders

EF deficits in set-shifting, cognitive flexibility, concept formation, interference control, and verbal fluency have been documented among children with separation anxiety disorder, overanxious disorder, and PTSD. EF in OCD has not been well addressed.

EF and Depression

Scant research has been conducted on the EF abilities among youth with depression. Studies that have included older adolescents have suggested some degree of sensitivity of EF tasks in identifying unipolar depression, but less specificity.
EF and Bi-Polar Disorder

There is a growing consensus about the nature of BD among children. Several studies have targeted its EF concomitants. Although results often have been confounded with significant co-morbidity issues, children and adolescents with BD reliably have demonstrated impairments relative to those without any history of mood disorders on several EF measures (e.g. working memory, set shifting).

EF and Traumatic Brain Injury

Pragmatic and executive functions in traumatic brain injury and right brain damage
An exploratory comparative study

EF Deficits and ASD

Executive Function Deficits in High-Functioning Autistic Individuals: Relationship to Theory of Mind

Sally Ozonoff, Bruce F. Pfefferbaum, and Sally J. Rogers

A review of high-functioning autistic individuals compared to a control sample in spatial and non-spatial object and non-object measures. Second-order theory of mind and executive function deficits were widespread among the autistic group, whereas first-order theory of mind deficits were found in only a subset of the sample. The relationship of executive functions and theory of mind deficits in each other, and their primary to sex, are discussed.
EF and Learning Disabilities

If all of these conditions are statistically related to behaviors and abilities reflecting EF than a common denominator must exist.

Impairment in behaviors associated with EF can have multiple etiologies often operating simultaneously.
Impaired Behavior Associated With Poor EF Can Result From:

• Lack of ability.
• Lack of knowledge.
• Lack of motivation.
• Internalizing symptoms.
• Externalizing symptoms.
• Poor impulse control.

Starting with an assessment of EF behaviors defines the real life landscape and can be used as a foundation to than explore etiologies.

Executive Function(s)

• One way to examine this issue is to research the factor structure of behaviors related to EF(s)
• To do so, we examined the factor structure of the Comprehensive Executive Function Inventory (CEFI)
• We conducted a series of research studies to answer the following question:
  • What is the underlying structure of the behaviors assessed on the CEFI?
  • Is there is just one underlying factor called executive function, or do the behaviors group together into different constructs suggesting a multidimensional structure?
 EFI Scales

Each form yields a Full Scale score and 9 separate content scales which contain items as follows...

Group Differences: ADHD
(Naglieri & Goldstein, 2013)

Group Differences: ASD
(Naglieri & Goldstein, 2013)
Group Differences: Learning Disabilities (Naglieri & Goldstein, 2013)

Group Differences: Mood Disorders (Naglieri & Goldstein, 2013)

Differentiating Ability From Achievement
PASS Theory

- **PASS** theory is a modern way to define ‘ability’ based on measuring neurocognitive abilities
- **Planning** = THINKING ABOUT THINKING
- **Attention** = BEING ALERT
- **Simultaneous** = GETTING THE BIG PICTURE
- **Successive** = FOLLOWING A SEQUENCE

The Brain as PASS

The Brain as PASS: A neuropsychological approach to the Brain based on three Functional Units described by A. R. Luria (1972)

PASS Theory: Planning

- **Planning** is a neurocognitive ability that a person uses to determine, select, and use efficient solutions to problems
  - problem solving
  - developing plans and using strategies
  - retrieval of knowledge
  - impulse control and self-control
  - control of processing
Knowledge and Planning Learning Curves

- Learning depends upon instruction and intelligence (PASS)
- At first, PASS plays a major role in learning
- When a new task is learned and practiced it becomes a skill and execution requires less PASS

![Diagram of Knowledge and Planning Learning Curves]

PASS Theory

- **Attention** is a basic neurocognitive ability we use to selectively attend to some stimuli and ignores others
  - focused cognitive activity
  - selective attention
  - resistance to distraction

PASS Theory

- **Simultaneous** processing is a basic neurocognitive ability which we use to integrate stimuli into groups and solve problems
  - Stimuli are seen as a whole
  - Each piece must be related to the others
PASS Theory: Successive

Successive processing is a basic neurocognitive ability which we use to manage stimuli in a specific serial order.
- Stimuli form a chain-like progression
- Stimuli are not inter-related

Ability Profiles

Organizing the Data

- A day in the life
- Ability/Knowledge/Skill
- Take a chronological perspective.
- Risk and Protective factors
- Determining eligibility
- Suggesting possible diagnoses
- Recommending needs
- Considering continuum of services
How Will the Pandemic Impact Our Work?

Corona Virus Stress Syndrome (CoViSS)

How Will the Pandemic Impact Our Work?

• Type and incidence of presenting problems – School versus Special Education populations?
• Short term effect on use of Norm Referenced self-report and observer reports with current students. No pandemic when norms collected.
• No reason to believe adverse impact on standardized tests assuming they are administered as developed, even with students wearing masks.
• How will Special Education students fare with fewer school days, less hours of support and remote learning?

Corona Virus Stress Syndrome (CoViSS)

• Unlike the 9/11 tragedy, an unexpected, sudden event, the virus pandemic has evolved at a slow creep until critical thresholds were reached and governments began to act.
• Even then their actions have rolled out slowly over days and weeks until our country is coming to a halt, much like a speeding train trying to slow down before a downed bridge.
• Further, the rapid growth of technology in the past twenty years is such that nearly every citizen has access to the web and television instantly on their phones.
• Cable news stations are devoting twenty-four-hour coverage of the pandemic. For better or worse we have truly become a global village. As with this teen’s father I think we are beginning to see some of our children, friends, family and neighbors succumb to these events.
Corona Virus Stress Syndrome (CoViSS)

• Spending hours on end watching news channels.
• Spending hours posting and reposting events related to the pandemic.
• Buying household products, foods, etc. that far exceed immediate need.
• Setting alerts on your phone for every news channel.
• Repeatedly texting friends, family and co-workers about related news events.

Corona Virus Stress Syndrome (CoViSS)

• Repeatedly making dire posts on social media.
• Making the pandemic all you can speak about with others.
• Ignoring daily responsibilities.
• Ignoring hygiene, rest and food.

Stress and Illness

• Stress and illness have intersecting components. Many studies indicate such a link.
• Theories of the stress–illness link suggest that both acute and chronic stress can cause illness, and lead to changes in mental and physical health, behavior and in how the body functions.
• Research indicates the type of stressor, whether it is acute or chronic and individual person characteristics such as age and physical well-being before the onset of the stressor can combine to determine the effect of stress on an individual.
• A person's personality, genetics, and childhood experiences including possible major stressors and traumas may also predispose their response to an event such as a viral pandemic.
Impact Of Quarantine and Isolation

• Increased social isolation.
• Increased problems with school work.
• Kindles depression and/or anxiety.
• Health fears.
• Frustration and boredom.

Corona Virus Stress Syndrome (CoViSS)

• If these symptoms fit you, a family member or loved one don't despair.
• The lesson we learned from 9/11 is that most people over time draw strength from family and friends and eventually return to more normal behavior.
• However, it never hurts to bring your concerns about yourself to a mental health professional if you experience CoViSS, speak to a friend or family member in whom you recognize these signs.

I Suggest For You:

• Limit your news watching to ½ hour per day.
• Turn off all alerts from news channels on your devices.
• Exercise.
• Attend to daily responsibilities.
• Work if you can.
I Suggest For You:

• Keep busy with family activities even if restricted to home.
• Resist posting or texting bad news.
• Reassure your children the world isn’t ending.
• Consider a budget for spending if needed over the next 3 months.

Guidelines for Quarantine

• Information is key; people who are quarantined need to understand the situation.
• Effective and rapid communication is essential.
• Supplies (both general and medical) need to be provided.
• The quarantine period should be short and the duration should not be changed unless in extreme circumstances.
• Most of the adverse effects come from the imposition of a restriction of liberty; voluntary quarantine is associated with less distress and fewer long-term complications.
• Public health officials should emphasize the altruistic choice of self-isolating.

I Suggest For the Youth You Work With:

• Communicate the facts as is age appropriate.
• Have parents make time to talk.
• Reframe the current stress.
• Look into the future.
• Help children think logically.
• Listen for catastrophic thinking.
• Offer empathy.
• Model problem solving.
• Teach relaxation.
The late singer songwriter Tom Petty wrote in his classic song *Crawling Back to You*, “Most things I worry about never happen anyway”.

Who We Are

- Worry is in our genes. It keeps us alert and aware of danger.
- But worry can also consume us if we are not vigilant and proactive, further complicating challenging situations and times.
- But so too is hope, optimism, motivation and empathy, the foundations of resilience.

Goldstein’s Axiom

Through intelligent and ethical educational and therapeutic practices, we can foster self-discipline, mental health, resilience in ourselves and our students without stealing away their dignity and hope.
May our philosophies keep pace with our technologies. May our compassion keep pace with our powers. And may love, not fear, be the engine of change.

Dan Brown, *Origin*
Children are living messages we send to a time and place we will never see.

Neil Postman
The Disappearance of Childhood

Adopt a Learning to Ride a Bicycle Mindset!

There are no constraints on the human mind, no walls around the human spirit, no barriers to our progress except those we ourselves erect.

Ronald Reagan
Questions?

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TEDx: https://www.youtube.com/watch?v=lsfwLIJeWMI