Anxiety, ADHD and Reading Disorders – How They Interconnect and How to Help

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Anxiety

- People with dyslexia may experience marked anxiety in situations in which they worry they will make a mistake or be ridiculed in front of others.

- The stress response is our body’s attempt to keep us safe from harm and is a biological and psychological response and anxiety is the worry about stress.

- Too much or too little anxiety does not result in the optimal outcome.

- Anxiety builds the more we feel we cannot control the outcome and can ultimately lead to “freezing.”
Anxiety and Dyslexia

- Anticipation of failure can raise anxiety in new situations and lead to avoidance

- Frustration can lead to anger which can be targeted at school, teachers and parents

- Parents can be the targets because they are trusted. By adolescence, this can lead to breaking away if they are feeling too dependent

- Negative thoughts can lead to depression

- All of this can lead to family stress with parents and siblings
Dyslexia and Anxiety Disorders

• Increased internalizing, anxious, and depressive symptomatology in dyslexia (Whitehouse, 2009). Severity depends on comorbidity with ADHD, perceived social support and female gender (Mugnaini, 2009)

• Compared to college students without RD, up to 5 times as many college students with RD report clinically significant test anxiety (Nelson, 2013). General anxiety is higher too (Carroll, 2006)

• Parents of children with dyslexia have a similar cognitive, emotional and behavioral profile as their children (Bonifacci, 2014)
Anxiety: What It Looks Like

• Hypervigilant
• Reactive to novel stimuli
• Cope by avoidance
• Parental accommodation; over protection
• Physical symptoms
• Inattention and poor performance at school
• Becomes most noticeable at 6 to 12 years of age
• Very common – Lifetime prevalence 14 – 27%
Other Symptoms

- Explosive outbursts
- Easily overwhelmed
- Extremely sensitive, readily tearful
- Fears and/or preoccupation with death, dying
- Avoidance of outside and interpersonal activities, such as school, parties, camp, sleepovers, safe strangers
Course of Anxiety

• 20% of children with dyslexia also have anxiety disorder and another 20% have a depressive disorder

• Childhood onset of anxiety has high risk of progression to depression

• Intense symptoms may diminish

• Emotional symptoms may interrupt the learning process

• Symptoms and failure in major roles may come in adulthood for some
Anxiety Disorders

- Separation Anxiety Disorder
- Generalized Anxiety Disorder
- Social Anxiety Disorder
- Obsessive Compulsive Disorder
- Post Traumatic Stress Disorder
- Panic Disorder
Separation Anxiety Disorder

- Excessive concern regarding separation from home or from attachment figures
  - Bad things happening to loved ones
  - Cannot be alone
  - Difficulty falling asleep; sleeping with loved ones
  - Physical aches and pains
  - Accommodation by caretakers
  - Strategies to maintain proximity to primary caretakers
  - Decoding performance predictive (Grills-Taquechel, 2012)
Generalized Anxiety Disorder

- Excessive worry and apprehensiveness
  - Restless, keyed-up, or on edge
  - Fatigued at the end of the school day
  - Concentration problems; performance anxiety
  - Difficulty falling asleep
  - Tense and irritable
  - Excessive need for reassurance – many questions
  - Over studying

- Unable to control the worry
- Impairment or distress
Social Anxiety Disorder

- Intense fear of being scrutinized and judged by others in social or performance situations
- Avoidance of social situations
- Physical symptoms of anxiety including confusion, pounding heart, sweating, shaking, blushing, muscle tension, upset stomach, and diarrhea.
- Children may express their anxiety by crying, clinging to parent or throwing a tantrum
Obsessive Compulsive Disorder

- Prominent obsessions and/or compulsions
  - Dirt, germs or other contamination
  - Ordering and arranging
  - Checking
  - Repetitive acts
  - Over-valued ideas
  - Hoarding

- Impairing or time consuming
Posttraumatic Stress Disorder

- True stressful event – life threatening
- Re-experiencing the event
- Avoidance and numbing
- Increased arousal
- Negative thoughts, feelings, moods
- Risks for enduring symptoms
  - Pre-existing mental disorder
  - Proximity
  - Posttraumatic environment
Panic Disorder

• Attacks of anxiety (physical symptoms)
  • Increased heart rate, pounding heart, palpitations
  • Hyperventilation
  • Choking sensation
  • Chest discomfort or pain
  • Abdominal pain
  • Some psychological symptoms
• Worry about the next one
• Avoidance behavior
• Agoraphobia
Assessment Strategies

• Multidimensional Anxiety Scale for Children (MASC)

• Screen for Child Anxiety Related Emotional Disorders Scale (SCARED)
  • Search “U Pitt SCARED”

• Achenbach Child Behavior Behavior Checklist (CBCL)
Understanding Anxiety and Dyslexia

- Lack of understanding the basis of dyslexia may result in self-blame and self-doubt

- The DE-STRESS Model for dyslexia
  www.eida.org/the-dyslexia-stress-anxiety-connection/

  - Define
  - Educate
  - Speculate
  - Teach
  - Reduce threat
  - Exercise
  - Success
  - Strategize
Decrease Bad Anxiety

• Yoga
• Mindfulness
• Meditation
• Biofeedback
• Exercise
Anxiety Disorders Treatment

- Positive reframing
- Thought challenging
- Control through competence
- Cognitive Behavior Therapy
  - Psychoeducation
  - Functional assessment
  - Exposure treatment
  - Family change
  - Parents as coach
SSRI Medications for Anxiety Disorders

- Fluoxetine (Prozac) – Effective for OCD, MDD, SAD, GAD, SoP
- Fluvoxamine (Luvox) – Effective for OCD, SAD, GAD, SoP
- Sertraline (Zoloft) – OCD, SAD, GAD, SoP
- Paroxetine (Paxil) – OCD, SoP,
- Citalopram (Celexa) no controlled trials in children
- Escitalopram (Lexapro) – FDA approved to age 12 for depression
- Duloxetine (Cymbalta) – FDA GAD 7 years and older
- Venlafaxine (Effexor) – Effective for SoP but ? GAD
The development of an RDoC-based treatment program for adolescent depression: “Training for Awareness, Resilience, and Action” (TARA)

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Major depressive disorder (MDD) is one of the current leading causes of disability worldwide. Adolescence is a vulnerable period for the onset of depression, with MDD affecting 8–20% of all youth. Traditional treatment methods have not been sufficiently effective to slow the increasing prevalence of adolescent depression. We therefore propose a new model for the treatment of adolescent depression – Training for Awareness, Resilience, and Action (TARA) – that is based on current understanding of developmental and depression neurobiology. The TARA model is aligned with the Research Domain Criteria (RDoC) of the National Institute of Mental Health. In this article, we first address the relevance of RDoC to adolescent depression. Second, we identify the major RDoC domains of function involved in adolescent depression and organize them in a way that gives priority to domains thought to be driving the psychopathology. Third, we select therapeutic training strategies for TARA based on current scientific evidence of efficacy for the prioritized domains of function in a manner that maximizes time, resources, and feasibility. The TARA model takes into consideration the developmental limitation in top-down cognitive control in adolescence and promotes bottom-up strategies such as vagal afference to decrease limbic hyperactivation and its secondary effects. The program has been informed by mindfulness-based therapy and yoga, as well as modern psychotherapeutic techniques. The treatment program is semi-manualized, progressive, and applied in a module-based approach, with the goal of empowering participants.
The 12-week TARA group program

Module 4: Core Values, Goal Setting and Committed Action

Module 3: Recognizing, Regulating, and Communicating Emotions

Module 2: Attending and Caring about Our Inner Experience

Module 1: Calming Down and Creating a Sense of Safety
Co-occurrence of Reading Disorder & ADHD

Learning disorders are often overlooked and undertreated in children with ADHD (Hong DS, JAACAP 2014)

High degree of overlap of genetic, neuropsychological and brain differences

15% to 45% of children with ADHD (inattention) also have RD (Hechtman, 2005; Sciberras et al., Pediatrics, 2014)

RD and ADHD share a common cognitive deficit in processing speed suggesting common genes (Willcutt, Cortex, 2010)
Things to Love About ADHD

- Scanning Focus
- Hyperfocus
- Resilience and commitment
- Ingenuity
- Willing to take risks and spontaneity
- Funny
- Anything is possible
- Persistence
- Different perspective
- Motivational
Famous People with ADHD

- Albert Einstein
- Michael Phelps
- Cher
- Walt Disney
- Richard Branson
- Michael Jordan
- Justin Timberlake
- Will Smith
- Jim Carrey
- Paris Hilton
ADHD: Core Symptom Areas

- Inattention
- Impulsivity/
  Hyperactivity

DSM V Diagnosis:
- Predominantly
  inattentive type
- Combined type
- Predominantly
  hyperactive-
  impulse type
Distractible Inattention
(Executive Function)

• Unsustained attention, doesn’t listen, doesn’t follow through
• Disorganized, avoids mental effort, loses things
• Easily distracted, forgetful
Potential Areas of Impact

ADHD

- Academic limitations
- Occupational/vocational
- Legal difficulties
- Motor vehicle accidents
- Smoking and substance abuse
- Relationships
- Low self esteem
- Injuries

Children

Adults

Adolescents
Rating Scales

- ADHD-RS
- Connors’ ADHD Rating Scale
- Vanderbilt Assessment Scales
Integrated Pharmacologic Treatment

- Psychoeducation for patient and family
- Management of medications
- Cognitive-behavior therapy

Stimulants

Methylphenidate HCl (Ritalin) 10-60 mg/day

Methylphenidate extended-release (XR) (Concerta) 18-72 mg/day

Methylphenidate HC (Methylin ER), Methylphenidate HCl HR (Metadate ER/CD), methylphenidate (Ritalin SR/LA); Quillivant XR

Dextromethylphenidate hydrochloride XR (Focalin XR) 2.5-40 mg/day

Dextroamphetamine (Dexedrine) 5-60 mg/day

Amphetamine mixed salts (Adderall, Adderall XR) 5-60 mg/day

Vyvanse (lisdexamfetamine) 20 – 70mg/day
Comparing Stimulants

- Equal efficacy across methylphenidate and dextroamphetamine
- Approximately 70 - 80% respond
- Response rate may be as high as 96%
- Some individuals have stimulant-specific responses

Stimulant Adverse Events

- Decreased appetite
- Insomnia
- Rebound effects
- Tachycardia, palpitations, hypertension
- Tics
- Growth suppression
- Psychosis
Newer Treatment Options

Daytrana - Methylphenidate transdermal system (MTS)

- Wear patch for up to 9 hours
- 10 – 30 mg titrated up

Vyvanse - Lisdexamfetamine (L-lysine-d-amphetamine)

- “Prodrug” decreases abuse potential
- Capsule can be dissolved in water and still has 12 to 14 hour duration

Quillivant XR (liquid methylphenidate)

- 5mg/ml comes as 25mg/5ml
- Start: 20 mg PO qam, may incr. by 10-20 mg/day q7 days; Max: 60 mg/day;
- Info: duration 8-12h
Atomoxetine (Strattera)

- Blocks presynaptic norepinephrine transporter with no significant dopamine effect
- Similar improvement in ADHD symptoms to methylphenidate, but perhaps less improvement in inattention
- Modest improvement in depression and anxiety if present
- Improves social and family functioning
- Dosage: 18-100 mg once/day
Atomoxetine (Cont.)

Adverse effects in children: decreased appetite, nausea, abdominal pain, dizziness, somnolence

Possible decreased height and weight with longer term treatment

Caution with poor CYP2D6 metabolizers

FDA warnings: liver toxicity, suicidal thoughts in children
Adrenergic Stimulating Agents

Symptoms - anxiety, sleep disturbance, PTSD, hyperactivity, impulsivity

- Clonidine (Catapres, Kapvay)
- Guanfacine (Tenex, Intuniv)
Unproven (but maybe effective) Treatments

- EEG biofeedback training
- Dietary manipulation: oligoantigenic diet
- Megavitamin therapy
- Herbal treatments
- Manipulation: body and craniosacral
- Sensory integration training
- Anti-yeast medications
- Supplements (Acetyl-L-carnitine, essential fatty acids, Ginko biloba)
- Micronutrients
Neurofeedback and Cogmed Working Memory Training

- A Meta-analysis of EEG-NF found 5 RCT studies with 263 patients and found improvements in overall ADHD score, inattention score and hyperactivity/impulsivity score compared to controls.

- Review of pharmacological and psychosocial treatments for ADHD found no evidence that cognitive enhancement trainings improved functioning of adolescents with ADHD.

- Meta-analysis of neurofeedback in ADHD found large effect sizes for inattention and impulsivity and medium effect sizes for hyperactivity.

- 7 studies of Cogmed Working Memory Training suitable for review found mixed findings concluding the strengths and limitations suggest “Possibly Efficacious Treatment for ADHD.”

1 Micoulaud-Franchi, et al Front Hum Neurosci, 2014
3 Arns et al., Biol Psychol, 2014
4 Chacko et al., J Clin Child Adolesc Psychol, 2013
Questions and Comments?