Pediatric considerations: Depression screening+

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Importance of Comorbidities

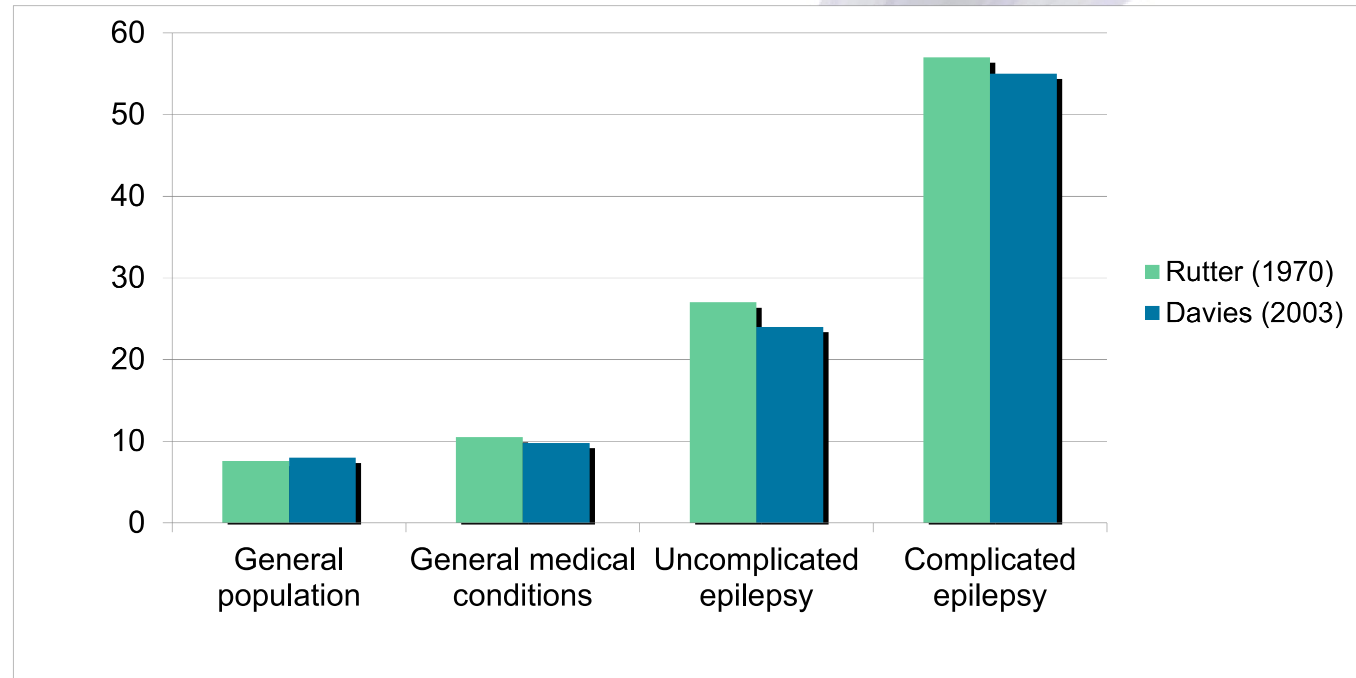
NINDS (previously)/AES committee have formal research goals

- From 2000-2012: Benchmark Area III: Prevent, limit, and reverse the co-morbidities associated with epilepsy and its treatment
- 2013-present: Reshaping of Benchmark to emphasize mechanism to get at prediction and better risk profiles to facilitate prevention
  - http://www.ninds.nih.gov/research/epilepsyweb/2014benchmarks.htm

2012 Institute of Medicine Report on Epilepsy

- Burden of epilepsy is more than seizures and comorbidities may be more impairing than seizures themselves
  - http://www.iom.edu/Reports/2012/Epilepsy-Across-the-Spectrum.aspx

Scope of the Problem



- Increased prevalence rates
  - 30-35% for life-time-same as Isle of Wight ‘70’s
  - Not just having a chronic medical disorder
- Depression and anxiety common problems
  - ADHD and Autism (another talk)
- 10-30% of adolescents have depression[1-4]
  - 14-27% endorse suicidal ideation[5] vs. 18.8% in non-EPI
  - Suicide attempts/completion rates are not known
  - If increased risk though, estimate from Youth Risk Behaviors Survey from 2019:
  - 8.9% in grades 9-12 reported at least one suicide attempt in the past 12 months. Female students attempted (11%) vs. males (6.6%).
  - At ages 15 to 19 years, the rate of suicides was 11.8 per 100 000 (17.9 per 100 000 in males and 5.4 per 100 000 in females).
- 30-35% have anxiety[6]
  - All types of anxiety but
    - Separation or specific phobias may be seizure related

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[1]Caplan et al., 2005; [2]Russ et al., 2012; [3]Wagner et al., 2012; [4]Jones et al., 2008 [5]Dagar & Falcone, 2020; [6]Jones et al, 2014; https://afsp.org/suicide-statistics/

Early in the morning I still get a little bit nervous
Fightin' my anxiety constantly, I try to control it

-Zoe Wees, singer-songwriter, "Control"

" 'Control' is about my struggle through rolandic childhood epilepsy – about what I had to deal with and still do even though the disease has healed. Back then I had many problems like loss of control, helplessness and exclusion that came along with this situation. This made my life as a child very difficult and complicated for not only me but also for the people around me…I'm so happy that I can tell this story now and try to help other people who are going to tough times, too."

Zoe Wees, Wonderland Magazine interview 2020

Risk Factors

- Low Verbal IQ
- Later age of onset
  - Developmentally harder for tweens/teens
- Specific epilepsy factors not clear
  - Less anxiety with longer duration
  - More depression with longer duration
- Family factors
  - Parenting stress (maternal depression)
  - Family adaptation to epilepsy
  - Genetic loading for psychopathology
  - Pre-existing family dynamics
  - Socio-economic factors

Functional Outcomes from National Survey of Children's Health

Relative risk in CWE vs. Controls	
	Relative Risk
Limited Activity	9.22
Grade Repetition	2.59
School Problems	1.63
Low Social Competency	2.16
High Parent Aggravation	2.46

Lacey et al, 2014

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Identification-Challenges

- Consensus that underrecognized
  - No time in neurology visit
  - Low competence/confidence in how to manage across providers
  - Lack of providers/long waitlists even if identified
- Confounded by epilepsy and its treatments
  - Epilepsy or medication side effects may mimic symptoms of depression including: fatigue, weight changes, sleep disturbance, and mood lability
    - ASMs (levetiracetam (Keppra), gabapentin, topiramate (Topamax), perampanel (Fycompa), valproate (Depakote), carbamazepine (Tegretol)) that are more likely to cause behavioral adverse effects (BAE) (irritability and aggression) in 10–20% of patients
  - Social stigma of epilepsy
  - Shared neurophysiology
    - Depression may predate seizure onset
    - History of depression and suicide is associated with a 2-5X increase in the risk of an unprovoked seizure.

Identification-Tools

- Efforts to do better through screening in neurology clinic
- Strengths and Difficulties Questionnaire (SDQ)
  - Ages 3-16; 25 items; many languages; Domains: Emotional (5 items), Conduct, Hyperactivity/Inattention, Peer Relationship, Prosocial Behavior
- Neurological Disorders Depression Inventory-Epilepsy for Youth (NDDI-E-Y)
  - 12-item self-report tailored to youth ages 12–17 with epilepsy
- Pediatric Quality of Life Inventory Epilepsy Module (PEDSQL - Epilepsy module)
  - Ages 2-18; 29 items; Domains: Impact, Cognitive Functioning, Sleep/Rest, Executive Functioning, and Mood/Behavior (5 items)
- Ages & Stages
  - Ages 1.5-5; 35 items; 7 items found that were sensitive and specific in pediatric epilepsy in one study
- Patient Reported Outcomes Measurement Information System (PROMIS)-Short Forms
  - Emotional Distress: Anxiety 8 items; Depressive Symptoms 8 items; Anger 5 items; Psychological Stress (4 or 8 items
  - Mental Health (+): Life Satisfaction, Meaning and Purpose, Positive Affect
  - Not validated in pediatric epilepsy, some work in adults

Eom et al, 2015; Wagner et al, 2016; Modi et al, 2017; Bennett et al, 2019

Treatment

- If identified, often undertreated
- Treatments that work for depression/anxiety work for dep/anx + epilepsy
  - Fear that would increase seizure frequency, which lead to some providers not to prescribing for the depression (similar fear as with ADHD meds)
- Treatment response and remission rates:
  - Highest for Cognitive Behavioral Therapy (CBT) and Selective Serotonin Reuptake Inhibitors (SSRI: Prozac, Zoloft, Paxil, Celexa, Lexapro)
  - Similar rates for either SSRI or CBT
    - Lower drop-out rates for CBT
- Not treating may be more detrimental…overcome the fear/hesitation
  - Providers—scared of seizures
  - Parents—scared of another mediation

Thank you for your attention