Rethinking the “difficult child”

Pediatric Trauma-Informed Care
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- I have no financial disclosures or conflicts of interest with the materials in this presentation.
Learning objectives - K.I.S.S.

- **Gain knowledge**: what does the research tell us about the impact of childhood adversity on health outcomes across the lifespan?
- **Gain insight**: why does childhood adversity change health outcomes and what does that mean for our patients?
- **Consider strategies and structures**: how can we translate this science into action in our pediatric practices?
Diagnosing Jamal
Symptoms and behaviors
Early Adversity Increases Physical, Mental, Behavioral Problems, Scientists Report

Centers for Disease Control & Prevention, Kaiser Permanente Study

Over 17,000 study participants

The ACE Study confirms, with scientific evidence, that adversity early in life increases physical, mental and behavioral problems later in life.

Dr. Robert Anda & Dr. Vincent Felitti
Investigators
The original 10 ACEs

<table>
<thead>
<tr>
<th>ABUSE</th>
<th>NEGLECT</th>
<th>HOUSEHOLD DYSFUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>Physical</td>
<td>Mental Illness</td>
</tr>
<tr>
<td>Emotional</td>
<td>Emotional</td>
<td>Mother treated violently</td>
</tr>
<tr>
<td>Sexual</td>
<td></td>
<td>Substance Abuse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Divorce</td>
</tr>
</tbody>
</table>
Subsequent studies

- Racism
- Witnessing a sibling being abused
- Witnessing violence outside the home
- Witnessing a father being abused by a mother
- Being bullied by a peer or adult
- Involvement with the foster care system
- Living in a war zone
- Living in an unsafe neighborhood
- Losing a family member to deportation
- Poverty
The Pair of ACEs

**Adverse Childhood Experiences**
- Maternal Depression
- Physical & Emotional Neglect
- Emotional & Sexual Abuse
- Divorce
- Substance Abuse
- Mental Illness
- Domestic Violence
- Incarceration
- Homelessness

**Adverse Community Environments**
- Poverty
- Violence
- Discrimination
- Lack of Opportunity, Economic Mobility & Social Capital
- Community Disruption
- Poor Housing Quality & Affordability
Study Findings: ACEs are common but largely unrecognized

<table>
<thead>
<tr>
<th>Household Dysfunction</th>
<th>Neglect</th>
<th>Abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Abuse</td>
<td>Emotional</td>
<td>Emotional</td>
</tr>
<tr>
<td>Parental Sep/Divorce</td>
<td>15%</td>
<td>11%</td>
</tr>
<tr>
<td>Mental Illness</td>
<td>Physical</td>
<td>Physical</td>
</tr>
<tr>
<td>Battered Mothers</td>
<td>10%</td>
<td>28%</td>
</tr>
<tr>
<td>Criminal Behavior</td>
<td></td>
<td>Sexual</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21%</td>
</tr>
</tbody>
</table>

Total 10 ACEs
Study Findings: ACES are strong predictors of adult health outcomes
Adverse Childhood Experiences affect a variety of factors in adulthood, such as:

- Brain Development
- Immune System
- 3x Risk of Heart Disease/Lung Cancer
- Hormonal System
- How DNA is read/transcribed
- Expected to live 20 fewer years

**BEHAVIOR**
- Lack of physical activity
- Smoking
- Alcoholism
- Drug use
- Missed work

**PHYSICAL & MENTAL HEALTH**
- Severe obesity
- Diabetes
- Depression
- Suicide attempts
- STDs
- Heart disease
- Cancer
- Stroke
- COPD
- Broken bones
The Dose-Response Relationship
## Probability of outcomes

Given 100 American Adults

<table>
<thead>
<tr>
<th>No ACEs</th>
<th>1-3 ACEs</th>
<th>4-8 ACEs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WITH 0 ACEs</strong></td>
<td><strong>WITH 3 ACEs</strong></td>
<td><strong>WITH 7+ ACEs</strong></td>
</tr>
<tr>
<td>1 in 16 smokes</td>
<td>1 in 9 smokes</td>
<td>1 in 6 smokes</td>
</tr>
<tr>
<td>1 in 69 are alcoholic</td>
<td>1 in 9 are alcoholic</td>
<td>1 in 6 are alcoholic</td>
</tr>
<tr>
<td>1 in 480 uses IV drugs</td>
<td>1 in 43 uses IV drugs</td>
<td>1 in 30 use IV drugs</td>
</tr>
<tr>
<td>1 in 14 has heart disease</td>
<td>1 in 7 has heart disease</td>
<td>1 in 6 has heart disease</td>
</tr>
<tr>
<td>1 in 96 attempts suicide</td>
<td>1 in 10 attempts suicide</td>
<td>1 in 5 attempts suicide</td>
</tr>
</tbody>
</table>
4 or more ACEs

- 3x the levels of lung disease and adult smoking
- 11x the level of intravenous drug abuse
- 4x as likely to have begun intercourse by age 15
- 14x the number of suicide attempts
- 4.5x more likely to develop depression
- 2x the level of liver disease

“Adverse childhood experiences are the single greatest unaddressed public health threat facing our nation today.”

Dr. Robert Block, the former President of the American Academy of Pediatrics
Heath & behavioral outcomes in children

Developmental delay
Growth delay
Failure to thrive

Asthma
Pneumonia
Viral infection
Atopic disease
Learning difficulties
Behavioral problems

Obesity
Diabetes
Headache
Abdominal pain
Teen pregnancy
Hyperthyroidism
Pubertal changes
Risk attributable to ACEs
Diagnosing Jamal
Adverse childhood experiences
Why?

- The long-term activation of the stress-response system — and the subsequent overexposure to cortisol and other stress hormones — can disrupt almost all your body's processes. This puts you at increased risk of numerous health problems.

Mayo Clinic
Toxic stress disrupts neurobiology
Dan Siegel’s Hand Model of the Brain
Healthy brain versus extreme neglect in 3 year olds

Healthy Brain

This PET scan of the brain of a normal child shows regions of high activity in the frontal and parietal lobes. At birth, only certain areas of the brain are fully functional, as regions like the temporal lobes, critical for emotional processing, are immature.
Neuroplasticity

Neurons that fire together wire together.
The Predicting Brain - threat or safety
Sensitive periods and the effects of maltreatment
THE HIPPOCAMPUS AND AMYGDALA

Amygdala  Hippocampus

Panic & Fear | Attention | Memory | Social Cues

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Cerebellar Vermis

Positive Feelings
- Perception
- Attention

Addiction
- Attention Problems
- Mental Illness
The Corpus Callosum

**LEFT HEMISPHERE**
- Spatial Patterns
- Math Calculation & Fact Retrieval
- Grammar & Vocabulary
- Processing Routine Situations

**RIGHT HEMISPHERE**
- Visual & Auditory Processing
- Prosaic Language
- Facial Perception
- Processing Novel Situations
<table>
<thead>
<tr>
<th>BRAIN REGION</th>
<th>FUNCTION</th>
<th>CRITICAL TIME</th>
<th>AFFECTED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIPPOCAMPUS</td>
<td>Emotional regulation</td>
<td>First 2-3 years</td>
<td>All maltreatment</td>
</tr>
<tr>
<td></td>
<td>Verbal memory/Spatial memory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORPUS CALLOSUM</td>
<td>Cross-brain function</td>
<td>Infancy</td>
<td>Neglect, Sexual abuse</td>
</tr>
<tr>
<td></td>
<td>Language &amp; math proficiency</td>
<td>Latent years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social cues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RT TEMPORAL GYRUS</td>
<td>Spoken language</td>
<td>Age 7-9</td>
<td>Emotional abuse</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>CEREBELLAR VERMIS</td>
<td>Center for <strong>mental health</strong></td>
<td>Prior to puberty</td>
<td>All maltreatment</td>
</tr>
<tr>
<td></td>
<td>Navigating through space</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Track periphery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORTEX</td>
<td>Thinking &amp; Judgment</td>
<td>First 2-3 years</td>
<td>All maltreatment</td>
</tr>
<tr>
<td></td>
<td>Executive function</td>
<td>Age 15-16</td>
<td>Sexual abuse</td>
</tr>
<tr>
<td></td>
<td>Long-term memory</td>
<td>Latent years</td>
<td>Witnessing DV</td>
</tr>
<tr>
<td></td>
<td>Vision</td>
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</tbody>
</table>
Epigenetics
Adoption of health-risk behaviors, or unhealthy coping strategies
Mechanism by which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan
Paradigm shift

• Instead of asking “what’s wrong with you?” ask “what’s happened to you? How did it impact your body or your brain? Who was there to help?”

• A traumatized person is neither sick, nor bad, but injured
Translating the science into action: the need to screen

The National Child Traumatic Stress Network
The 3 E’s of Trauma
ACE scores: great for predicting population outcomes; terrible at predicting individual health outcomes

ACEs are a risk factor
Protective factors buffer the effects of toxic stress
Relationship heals trauma

- The single most common factor for children who develop resilience is at least one stable and committed relationship with a supportive parent, caregiver, or other adult.

Instead of reacting to the behavior, respond to the need.
A new lens

<table>
<thead>
<tr>
<th>Trauma glasses off</th>
<th>Trauma glasses on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manipulative</td>
<td>Getting needs met in ways that have worked in the past. Doing whatever is necessary to survive.</td>
</tr>
<tr>
<td>Lazy</td>
<td>Overwhelmed. Lacking the skills to make decisions about what to do first or to organize.</td>
</tr>
<tr>
<td>Resistant</td>
<td>Mistrustful of others due to history of being hurt by others. Scared to make progress and then lose everything.</td>
</tr>
<tr>
<td>Disrespectful</td>
<td>Feeling threatened, unsafe, out of control.</td>
</tr>
<tr>
<td>Attention-Seeking</td>
<td>Feeling disconnected, alone, or unheard by others. Looking for connection.</td>
</tr>
</tbody>
</table>
Diagnosing Jamal

Health implications?
Interventions to increase safety and connection so he can learn?
Trauma-informed is keeping people safe and connected so they can learn