Adverse Childhood Experiences: “ACEs” - What they are & why we should care

OBJECTIVES:
1. ACEs change our brain
2. We pass this change along to the next generation
3. This is preventable

(Reminder – Thumbs up)
“What Happened to You?”

https://www.cdc.gov/violenceprevention/acestudy

American Journal of Preventive Medicine, 1998, Volume 14
ACE Score: Common Language

1. Emotional Neglect
2. Emotional Abuse
3. Physical Neglect
4. Physical Abuse
5. Sexual Abuse
6. Mother Treated Violently
7. Parent Separation/Divorce
8. Household Substance Abuse
9. Household Mental Illness
10. Incarcerated Family Member

One Count for each type
ACEs Impact Adults 50 Years Later

As ACE scores go up...

- Cancer
- Fractures
- Diabetes
- Liver disease
- Lung disease
- Heart disease

ACEs are common among general population
- 2/3 have 1
- 1 in 8 (12.5%) have experienced 4 or more
ACEs:
Accumulate & Tend to occur in groups

4 ACEs More Likely to:
• 2x - Smoke
• 7x - Become Alcoholic
• 10x - Inject Street Drugs
• 12x - Attempt Suicide
• 32x - Behavioral Problems in School

Center for Disease Control
Carrion, Victor, PhD; Stanford University (2014)
6 or More ACEs:

- Live 20 years Less
- Males: 46x more likely to become an injection drug user

“The ACE study concluded that child maltreatment was the most costly public health issue in the United States.”—Bessel van der Kolk

Fisher, 2014, Neurofeedback in the Treatment of Developmental Trauma
ACEs:

Study Confirms Link Between Juvenile Offenders ACE rates much higher than CDC’s ACE Study

• Top 3 most prevalent ACEs are same for males/females
  - Family violence
  - Parental separation or divorce
  - Household member incarceration

• 2/3 of the juvenile offenders reported these ACEs

http://www.journalofjuvjustice.org/JOJ0302/JOJ0302.pdf 2014 Spring

https://acestoohigh.com/2014/08/20/florida-study-confirms-link-between-juvenile-offenders-aces-rates-much-higher-than-cdcs-ace-study/

POLYVICTIMIZATION:
A condition, not an event

Exposure to one type of violence doubles risk of others.

Past year assault correlated with

- 2.7 x greater likelihood of sexual victimization
- 2.9 x greater likelihood of caregiver maltreatment

1 in 6 children (17%) experienced 6 or more types of victimization

David Finkelhor, Recent Findings from the National Surveys of Children’s Exposure to Violence. Lecture January 27th, 2016
The predictive value of classic ACEs are not all equally as strong

In addition:

- Poverty
- Exposure to violence
- Social isolation
- Peer victimization

The Impact of Trauma is More Global on Children than Adults

**Toxic Stress**

- Strong
- Prolonged
- Frequent

Toxic stress elicits a persistent fear response.

What we now know about trauma & the brain requires nothing less than “a revision in understanding of the neurobiological basis of psychiatric disorders & a reconceptualization of resilience.”

Martin Teicher, 25th Annual International Trauma Conference, Boston MA, 2014
Toxic Stress Changes Our Biology

Developmental trauma changes brains.

Structure

Function
Toxic stress reduces brain volume by as much as 20%
Type and Timing of Adversity Matters

Nurturance at age 4 predicts brain volume at age 14

Maternal stress in infancy changed genetic expression & showed up at age 15 in behavioral problems

Types of maltreatment: sexual abuse

Abuse affects the parts of the brain involved in the experience.

- Sexual abuse affects the visual cortex involved in facial recognition
- Sexual abuse reduces cortical thickness of the portion representing the genital area.

Types of Maltreatment: Physical Abuse

Correlates with later drug and alcohol abuse

Impacts volume of the cerebral cortex

Types of Maltreatment:
Family Violence

Witnessing violence toward siblings
- Comparable to the effect sizes of experiencing sexual abuse
- Negative effects are far greater than witnessing violence toward mothers or fathers

Parental verbal aggression
- Changes white matter pathways related to language processing = lowered verbal IQ.
- Psychiatric effects comparable to extra-familial sexual abuse.

Wired for Fear and Anger

“Following abuse and neglect, the world is experienced with a different nervous system.” — Bessel van der Kolk

You can’t talk to an amygdala
Delayed Manifestations

The traumatized state is set in childhood. There may be a silent period with consequences unfolding later.

The hippocampus begins to reduce in adolescence, not in childhood. Major depression begins in puberty and may carry forward throughout life.

Childhood maltreatment is a major risk factor for psychiatric disorders.
Intergenerational Transmission of Trauma

Beyond modeling. Changes occur at the cellular level.
Epigenetics

Genes are the hardware. The epigenome is the software operating system.

Chemical signatures are written on top of the gene through exposure to toxic stress. The stress switches genes “on” or “off” making them expressed or silent.

Toxic stress can shorten alleles, which are then associated with alcoholism, cancer, dementia, diabetes, heart disease…

A mother’s stress can alter gene expression in her own DNA, which she could then pass down to her child.—Kerry Ressler, in The Anatomy of Fear, by Martha McKenzie, Emory Medicine Magazine, Spring 2014
RESILIENCE

The ability to adapt to adverse experiences and regain strength, health, or success.

Resilience and recovery are NOT the same as “without injury.”

- Developmental damage shows up in brain scans, even when individuals are not symptomatic.

- Neural plasticity does make recovery and adaptation possible.
Adult Disease: A Developmental Disorder?

- Adverse Childhood Experiences
- Social, Emotional, & Cognitive Impairment
- Adoption of Health-risk Behaviors
- Disease, Disability and social problems
- Early Death
- Death

PEDIATRICS. 2012, The Lifelong Effects of Early Childhood Adversity and Toxic Stress; Jack P. Shonkoff, MD, Andrew S. Garner, MD, PhD, etc.
“Eradicating child abuse in America would reduce the overall rate of depression by more than half, alcoholism by two-thirds, and suicide, serious drug abuse, and domestic violence by three quarters.”

Smart Investment

13.7% per annum

www.heckmanequation.org
Natl. Institute of Early Education Research:
The Perry Preschool program monitored control groups over 4 decades.

Figure 1
Major Findings: High/Scope Perry Preschool Study at 40

<table>
<thead>
<tr>
<th>Category</th>
<th>Program group</th>
<th>No-program group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrested 5+ times by 40</td>
<td>36%</td>
<td>55%</td>
</tr>
<tr>
<td>Earned $20K+ at 40</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Graduated high school</td>
<td>60%</td>
<td>77%</td>
</tr>
<tr>
<td>Basic achievement at 14</td>
<td>15%</td>
<td>49%</td>
</tr>
<tr>
<td>Homework at 15</td>
<td>38%</td>
<td>61%</td>
</tr>
<tr>
<td>IQ 90+ at 5</td>
<td>28%</td>
<td>67%</td>
</tr>
</tbody>
</table>

PROTECTIVE FACTORS

When present & robust, the likelihood of abuse & neglect diminish.

1. Parent Resilience
2. Knowledge of Parenting & Child Development
3. Social & Emotional Competence of Children
4. Social Connections
5. Concrete Support in Times of Need

Center for the Study of Social Policy
Towards a Trauma Informed Community

- What makes trauma, trauma?
- Being TI – Recognizing it is common, focus on what happened to you
- Understanding the vulnerabilities/triggers of survivors
- Avoiding re-traumatization

Systems Thinking
Trauma Lens

1. Ecological systems—children grow up in families
2. Inter-generational – empower adults in children’s lives
3. Life course - Start early
4. Nurturing Care – safety, nutrition, etc.

[Diagram: Building Self-Healing Communities]

www.CSSP.org 2017

https://www.slideshare.net/DeniceColson/links-between-childhood-trauma-and-adult-disease-becoming-trauma-informed
SAMHSA
EFFECT OF Trauma-Oriented Evaluations on Doctor Office Visits

Benefits of Incorporating a Trauma-oriented Approach

- **Biomedical evaluation:** 11% reduction in DOVs
  (Control group) (Doctor Office Visits) in subsequent year.
  (700 patient sample)

- **Biopsychosocial evaluation:** 35% reduction in DOVs
  (Trauma-oriented approach) in subsequent year.
  (>120,000 patient sample)

[External link](https://www.slideshare.net/DeniceColson/links-between-childhood-trauma-and-adult-disease-becoming-trauma-informed)
Our Community’s Reactions: Frederick County

- **Public Awareness**
  From 2 to 20 to 1400 in one year

- **Systems Response**
  Increased collaboration across institutions
  Inclusion in Local Health Improvement Plan
  Focus of Interagency Early Childhood Committee
  Course at Mount St. Mary’s University
  Frederick County Public Schools
  Frederick’s Child Magazine

- **Next Steps?**
Nothing you do for children is ever wasted.

"Safety and security don't just happen. They are the result of collective consensus and public investment. We owe our children, the most vulnerable citizens in our society, a life free of violence and fear."

--Nelson Mandela
Resources: Research


PEDIATRICS. 2012, The Lifelong Effects of Early Childhood Adversity and Toxic Stress; Jack P. Shonkoff, MD, Andrew S. Garner, MD, PhD, etc.

David Finkelhor, Recent Findings from the National Surveys of Children’s Exposure to Violence. Lecture January 27th, 2016


Martin Teicher, 25th Annual International Trauma Conference, Boston MA, 2014


Creating Trauma Informed Provider Organizations, Georgetown University Center for Child and Human Development, retrieved from http://gucchdtacenter.georgetown.edu/data/issues/2015/0215_article.html

EMDR: an evidence based treatment for trauma victims, Victims and Offenders, 4:391–397, 2009, Copyright © Taylor & Francis Group, LLC ISSN: 1556-4886 print/1556-4991 online, DOI: 10.1080/15564880903227495 (pdf)


Resources: URLs

- TED TALK: https://www.ted.com/talks/nadine_burke_harris_how_childhood_trauma_affects_health_across_a_lifetime

- Centers for Disease Control: https://www.cdc.gov/violenceprevention/acestudy/

- Take the survey: http://www.npr.org/sections/health-shots/2015/03/02/387007941/take-the-ace-quiz-and-learn-what-it-does-and-doesnt-mean

- ACEs networks: http://www.acesconnection.com/


- CANarratives.org
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