Fight, Flight, FREEZE

The Life-long Impact of Childhood Stress & Trauma

Bethany Brand, Ph.D.
The EVOLUTION of PTSD

WWI  VIETNAM  CLASSROOMS
Husband’s Brain Scan

Lanius et al., 2003
Lanius et al., AJP, 2003

Wife’s Brain Scan
The Effects of Childhood Trauma Can Last a Lifetime
What smoking is to cancer, trauma is to psychiatric problems.

Steven Sharfstein, M.D.
How Common is Child Abuse?

1,000 - 2,000 children in the United States die each year due to abuse or neglect.

1 OUT OF 8 CHILDREN
Experience neglect, or emotional, physical or sexual abuse.
Adverse Childhood Experiences Scale (ACE) Study

European Archives of Psychiatry and Clinical Neuroscience

The enduring effects of abuse and related adverse experiences in childhood

R. F. Anda, V. J. Felitti, J. D. Bremner, J. D. Walker, Ch. Whitfield, B. D. Perry, Sh. R. Dube, W. H. Giles
Adverse Childhood Experiences Study (ACE)

8 ACEs:
1. Emotional abuse
2. Physical abuse
3. Sexual abuse
4. Witnessing domestic violence
5. Parental marital discord
6. Growing up with mental illness
7. Substance abuse
8. Criminal household members
### Definition and prevalence of each category of adverse childhood experience and the ACE score

<table>
<thead>
<tr>
<th>Childhood abuse</th>
<th>Total (N = 17,337)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional</strong></td>
<td>10.6</td>
</tr>
<tr>
<td>(Did a parent or other adult in the household...)</td>
<td></td>
</tr>
<tr>
<td>1. Often or very often swear at you, insult you, or put you down?</td>
<td></td>
</tr>
<tr>
<td>2. Sometimes, often, or very often act in a way that made you fear that you might be physically hurt?</td>
<td></td>
</tr>
<tr>
<td><strong>Physical</strong></td>
<td>28.3</td>
</tr>
<tr>
<td>(Did a parent or other adult in the household...)</td>
<td></td>
</tr>
<tr>
<td>1. Often or very often push, grab, slap, or throw something at you?</td>
<td></td>
</tr>
<tr>
<td>2. Often or very often hit you so hard that you had marks or were injured?</td>
<td></td>
</tr>
<tr>
<td><strong>Sexual</strong></td>
<td>20.7</td>
</tr>
<tr>
<td>(Did an adult or person at least 5 years older ever...)</td>
<td></td>
</tr>
<tr>
<td>1. Touch or fondle you in a sexual way?</td>
<td></td>
</tr>
<tr>
<td>2. Have you touch their body in a sexual way?</td>
<td></td>
</tr>
<tr>
<td>3. Attempt oral, anal, or vaginal intercourse with you?</td>
<td></td>
</tr>
<tr>
<td>4. Actually have oral, anal, or vaginal intercourse with you?</td>
<td></td>
</tr>
</tbody>
</table>
The number of ACEs added to create the ACE score

At least 1 ACE reported by 64% of respondents.

Dose Response: as ACE score increased, the risk of problems increased
Mental Health Problems

The bar chart illustrates the prevalence of various mental health problems across different ACE (Adverse Childhood Experiences) scores. The y-axis represents the prevalence (%) of mental health problems, ranging from 0% to 60%. The x-axis lists the mental health problems: Panic Reactions, Depressed Affect, Anxiety, and Hallucinations.

- Panic Reactions show a moderate prevalence across ACE scores.
- Depressed Affect has a higher prevalence, especially for ACE scores of 2 and 3.
- Anxiety exhibits a higher prevalence with a peak at an ACE score of 0.
- Hallucinations have the lowest prevalence across all ACE scores.

The chart indicates that higher ACE scores are associated with a higher prevalence of mental health problems.
Health Problems

Prevalence (%)

ACE Score
- 0
- 1
- 2
- 3
- ≥4

Sleep Disturbances
Severe Obesity
Multiple Somatic Symptoms
Substance Abuse

Prevalence (%) vs. ACE Score

- Smoking
- Alcoholism
- Illicit Drug Use
- Injected Drug Use

ACE Score:
- 0
- 1
- 2
- 3
- ≥4
Sexuality

- Early Intercourse
- Promiscuity (≥30 partners)
- Sexual Dissatisfaction

Prevalence (%) by ACE Score:
- Early Intercourse: 0%
- Promiscuity (≥30 partners): 5%
- Sexual Dissatisfaction: 30%
Memory Impairment High Level of Perceived Stress

Prevalence (%)

Memory & Stress

ACE Score
0 1 2 3 ≥4

Prevalence (%)
Anger

Prevalence (%)

Difficulty Controlling Anger

Risk of Intimate Partner Violence

ACE Score

0 1 2 3 4
Why Does Severe, Repeated Childhood Trauma Cause So Many Problems Later in Life?
It Changes the Brain’s Response to Stress
High Stress causes **Impaired Brain**

Logical brain goes “off line”

We can’t:
- focus our attention
- think logically
- remember well

**conditioned stress response**
The Prefrontal Cortex
High Stress = Impaired Prefrontal Cortex

- Stress chemicals basically **turn it off**
- Old and primitive brain structures take control
- **We can’t...**
  - Control our attention
  - Remember important information
  - Think logically
  - Over-ride emotional reflexes or habits
- Evolutionary origins: Stop to think – you’re lunch
Brain Changes Related to Trauma

- Smaller hippocampus, corpus callosum, prefrontal cortex
- Heightened reactivity
- Different patterns of brain activation
Childhood abuse affects corpus callosum

The morphology of the corpus callosum is significantly affected by early neglect (as well as physical abuse and sexual abuse).

Teicher et al. (2004) Biological Psychiatry 56, 80-85
Emotion Dysregulation in PTSD

Emotional Undermodulation

Reexperiencing

Left Rostral Anterior Cingulate
↓
Medial Prefrontal Cortex
↓
Right Anterior Insula

↑
Amygdala

Regions implicated in regulation of emotion and arousal

Emotional Overmodulation

Dissociation

Left Rostral Anterior Cingulate
↑
Medial Prefrontal Cortex
↓
Amygdala

↓
Right Anterior Insula

Region implicated in awareness of bodily states

Lanius et al., 2010, AJP
Executive Functioning

- Impulse control
- Decision making & judgement
- Emotion regulation
- Managing transitions
- Keeping organized & planning ahead
- Focusing attention
- Working memory
- Many others

(Mugge, 2012; Fox et al., 2015; Zou et al. 2013)
Brain & stress system is changed:
- brain highly sensitized to threat;
- easily triggered;
- less able to think and feel at the same time

Behavior:
- acting out trauma: violence; self-harm; suicidal
- impulsive,
- feel so helpless that they seek control in unhealthy ways (become the aggressors; they challenge authority figures)
What Happens to Kids with So Many ACEs?

- Thinking - dissociation, poor decision making, illogical thinking, hopeless about the future

- Relationships - profound mistrust; tend to be victimized or victimizer; get left out
What does it cost to do nothing?
Estimated Lifetime Costs for all 2014 First Time Victims = $5.9 Trillion*

*Suffer the Little Children: An Assessment of the Economic Costs of Child Maltreatment
The Perryman Group, info@perrymangroup.com
Dissociation:

The Escape When There is No Escape
Response to Severe Danger

- Fight
- Flight
- Freeze = dissociation

- With repeated exposure to danger, the brain adapts and becomes sensitized .... *more reactive to danger*
What is Dissociation?

Disruption:

- Emotion - “went numb”
- Memory - amnesia
- Cognition - intrusive thoughts
- Behavior - re-enact father’s murder

(Diagnostic & Statistical Manual of Mental Disorders-5)
(Artwork by Rachel Elise, TU class of 2010)
How Do Kids with So Many ACEs Survive?

- They *dissociate*
  - Disconnect from painful memories - amnesia
  - Disconnect from their bodies and emotions - see themselves like in a movie, look dazed & emotionless

- Dissociation later causes big problems, although helped survival:
  - **Emotions:** highly reactive; feel too much or too little - can look like they have no feelings or extreme feelings
  - **Behavior:** feel unable to control their behavior when in a dissociated state
Severe Childhood Trauma: Fragmented Identity

Artwork by Rachel Elise (TU class of 2010)
Dissociative Identity Disorder

Artwork by Rachel Elise (TU class of 2010)
How Can We Help?
How to Help Traumatized People

- **Understand**
  - Kids survive by: dissociating, taking it out on themselves, pushing others away, mistrusting everyone, denying trauma & its impact

- **Encourage**
  - Convey respect, belief in them. Support safe connections.
How to Help Traumatized People

- Slow down breathing
- Allow as much control now as possible
- Grounding: use senses to get in the present
- Orient: current date, place *safe now*
THE IMPACT OF TRAUMA

What is the impact of trauma?

Trauma can impact individuals in many ways, including socially, psychologically, academically, neurophysiologically, and socioeconomically, and can impair physical health as well [1].

Traumatized individuals, particularly those who are traumatized in childhood and adolescence, are at increased...
Resources

Books

- *The Boy Who Was Raised as a Dog*, Bruce Perry
- *Trauma and Recovery*, Judith Herman
- *The Body Keeps the Score*, Bessel van der Kolk
- *Neuroscience of Human Relationships: Attachment and the Developing Brain*, Louis Cozolino
Resources

Websites

➤ TeachTrauma  www.teachtrauma.com/
➤ Child Abuse Narrative  www.canarratives.org/
➤ ISTSS -  www.istss.org/
➤ Children’s Bureau -  www.acf.hhs.gov/programs/cb
➤ SAMHSA -  www.samhsa.gov/ebp-web-guide
Thank you!

TeachTrauma.com

bbrand@towson.edu