Neurobiology of Trauma, Adverse Childhood Experiences, & Implications Concerning IPV Offenders

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Current Understanding:

Connection between brain development, childhood maltreatment, family violence and trauma – polyvictimization a key.

Effects of adverse childhood experiences (ACEs) on the brain and health has expanded.

Better understanding of brain development, TBIs, and the various types of multiple victimization experienced by victims and offenders.

Can lead to later aggressive behavior and impulsivity due to the interaction of the brain and psychosocial factors.

Influence of trauma and stress makes it much more difficult to focus on just one issue when assessing or treating intimate partner violence or abuse.

Categories of Adverse Childhood (ACE) Experiences


<table>
<thead>
<tr>
<th>Category</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abuse, by Category</td>
<td></td>
</tr>
<tr>
<td>Psychological (by parents)</td>
<td>11%</td>
</tr>
<tr>
<td>Physical (by parents)</td>
<td>28%</td>
</tr>
<tr>
<td>Sexual (anyone)</td>
<td>21%</td>
</tr>
<tr>
<td>Emotional &amp; Physical Neglect</td>
<td>25%</td>
</tr>
<tr>
<td>Household Dysfunction, by Category</td>
<td></td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>27%</td>
</tr>
<tr>
<td>Mental Illness</td>
<td>19%</td>
</tr>
<tr>
<td>Mother Treated Violently</td>
<td>13%</td>
</tr>
<tr>
<td>Imprisoned Household Member</td>
<td>5%</td>
</tr>
<tr>
<td>Parental Separation or Divorce</td>
<td>23%</td>
</tr>
</tbody>
</table>

Adverse Childhood Experiences Score

Number of categories of adverse childhood experiences

<table>
<thead>
<tr>
<th>ACE score</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>36%</td>
</tr>
<tr>
<td>1</td>
<td>26%</td>
</tr>
<tr>
<td>2</td>
<td>16%</td>
</tr>
<tr>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>4 or more</td>
<td>12%</td>
</tr>
</tbody>
</table>

• More than 60% have at least one ACE, and almost ¼ have 3 or more ACEs
Long-Term Trauma Impact–ACE Pyramid: CDC

Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

Adverse Childhood Experiences

Disrupted Neurodevelopment

Social, Emotional, and Cognitive Impairment

Adoption of Health-risk Behaviors

Disease, Disability, and Social Problems

Early Death

Death

Conception

Domestic Violence (DV)/Intimate Partner Violence (IPV) Definition

Any hurtful or unwanted behavior perpetrated upon an individual by an intimate or prior intimate. Includes physical, psychological, sexual and emotional abuse. Primarily a learned behavior whose effects, without intervention, become more destructive over time. The goal of intervention is to change, attitudes, beliefs, and behaviors.
Definitions

Distinction between Abuse and Aggression:

- **Abuse** = a pattern of learned behavior; one partner gets his/her needs met at the expense of the other; use of power and coercive control; usually has elements of intimidation, and often produces hurt, fear and trauma. The abusive person is using superior position, privilege, or strength to impose his/her will on another. Control can be directed at the victim’s actions, feelings, and/or beliefs. The context, motivation, and consequences are the keys.

- **Aggression/Assault** = usually physical but can be verbal or sexual, where one person commits an assaultive behavior on the other person. This is usually an isolated event.

- Thus, can have abuse without physical aggression, or aggression without abuse. Mutual Abuse would be where both partners are fighting with each other for power and control (not common – 10-15% of cases).

Neuropsychological Functioning:

Cognitive Domains

- **Motor Function**
- **Visual-Spatial Skills**
- **Sensory-Perceptual Function**
- **Attention**
- **Memory**
- **Language**
- **Thinking/Conceptualization**
- **Executive Function**

Executive Function Issues/Deficits for Offenders and Victims of Family Violence: A Biopsychosocial Approach

- General organization and planning
- Ability to solve problems
- Regulation of activity/Impulsivity
- Learned aggression, power and control
- Low threshold for frustration/stress
- Closed head injuries or other neuropsychological impairments
Common Principles Linking Trauma and Brain Impairment to Family Violence

Affect and impulse dysregulation – Aggression
High levels of anxiety
Rapid shifts in psychological state
Disturbances in sense of self: low self-esteem, body image distortion, identity diffusion/fragmentation, attachment issues, lack of self-awareness
Self-destructive behaviors
Attention, concentration, and memory problems

Trauma and Biological Stress Systems

The Prefrontal Cortex

- Key circuitries in the brain affected by trauma.
- Emotional and brain responses when confronted with a traumatic situation.
- Traumatic events and memory.
- For us, knowledge of neurobiology can assist understanding and helping trauma victims/survivors.

The Prefrontal Cortex

Holds thoughts and memories in mind.
Helps us manage emotions and reflect on behavior.
Helps manage other brain regions.
Allows us to focus our attention where we choose, and do what we choose, consistent with our goals and values.
Becomes impaired in traumatic situations.
In Traumatic (and High-Stress) Situations...

- Loss of prefrontal regulation: Chemicals from the brain stem impair (and may shut down) the prefrontal cortex.
- Bottom-up attention: Attention is automatically captured by anything perceived as dangerous or threatening, or as necessary for survival.
- Emotional reflexes: Reflexes are automatic and include freeze, flight, or fight responses, as well as bodily responses like your heart pounding quickly.

Fear Circuitry
The Prefrontal Cortex

- Plays a huge role in trauma and PTSD.
- Located in multiple brain areas.
- Operates automatically and mostly outside awareness.

“Fight or Flight” is Misleading

- Our brains are not wired this way.
- We evolved to freeze first, then flee.
- And fighting is only in the service of fleeing, unless there is no other option.
- It’s important that assault victims understand this because many will be ashamed they did not fight back.

Stressful Situations: Amygdala Control

Brainstem (lower) vs Midbrain (amygdala) vs Frontal Lobes (upper)

The Women Who Face more Traumatic Brain Injury (TBI) than NFL Players.

Huffington Post – June 2, 2015    Melissa Jeltsen

On Tuesday, the Sojourner Center, one of the largest U.S. domestic violence shelters in Phoenix, is taking a big step to change that. The center, along with TBI experts at local hospitals and medical institutions, is launching an ambitious program dedicated to the study of TBI in women and children living with domestic violence. The Sojourner BRAIN (Brain Recovery And Inter-professional Neuroscience) Program will study how common domestic violence-related TBI is, investigate short-term and long-term effects, develop domestic violence-specific tools to screen for head trauma, and provide individualized treatment plans.

The Impact of Traumatic Brain Injury: Screening Protocol and Response for Medical and Advocacy Services

Akosoa McFadgion, PhD, M5SW
Jacquelyn C. Campbell, PhD, RN, FAAN
Jocelyn C. Anderson, PhD(c), RN
Audrey Bergin, MPH, MA

IPV is Common & Often Includes TBIs

- TBIs resulting from physical contact to the head (i.e., blunt force trauma): 68% of abused women reporting at least one mild TBI
- Head injuries and broken bones from blows to the face as a result of DV
- Strangulation and head injuries in abused women seldom considered together - both affect the brain
  - Cumulative effect important
  - Overlap of TBI Sx with PTSD Sx not considered
- Strangulation one or more times:
  - 68% in a DV shelter sample (Wilbur, Higley et al. 2001)
  - 54% in abused women seeking emergency shelter (Sutherland, Bybee et al. 2002)
  - 50% among women killed, almost killed & 10% other abused women in a national sample of abused women (Campbell, Webster et al. 2003)

<table>
<thead>
<tr>
<th>Injury</th>
<th>Abused (%)</th>
<th>Non-abused (%)</th>
<th>Chi-square</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial Injuries</td>
<td>16</td>
<td>4</td>
<td>31.56</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Eye Injuries</td>
<td>12</td>
<td>5</td>
<td>14.42</td>
<td>0.0001</td>
</tr>
<tr>
<td>Head Injuries With Loss of Consciousness</td>
<td>7</td>
<td>2</td>
<td>14.67</td>
<td>0.0001</td>
</tr>
<tr>
<td>Head Injury with Damage to the Ear</td>
<td>5</td>
<td>1</td>
<td>8.75</td>
<td>0.0031</td>
</tr>
<tr>
<td>Dental Injuries</td>
<td>10</td>
<td>13</td>
<td>2.87</td>
<td>0.0900</td>
</tr>
<tr>
<td>Broken or Dislocated Jaw</td>
<td>4</td>
<td>1</td>
<td>5.61</td>
<td>0.0178</td>
</tr>
<tr>
<td>Choking</td>
<td>19</td>
<td>0.00</td>
<td>79.76</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Mindsight

• When we are reacting, we are not using all of our brain but only that part that experiences threat.
• Mindsight (Siegel, 2010a) is the term for the part of the brain function that we are not using when we are in a survival mindstate.
• Mindsight is the capacity to pay attention, to be in an engaged state of mind that is not possible to access if we rely only on reacting to threatening situations and our survival skills.

(Mary Jo Barrett, Treating Complex Trauma – A Relational Blueprint for Collaboration and Change)

Survival Mindstate continued

• When we react to stress in a survival mindstate, we are not engaged in the world around us, nor are we connected to our own thoughts, feelings, relationships and options.
• Stress and discomfort trigger our survival brain and our only options are to impulsively fight, flee or freeze. (Avoid internal discomfort)
• We lose access to internal resources, which could assist us in making a calculated and mature response instead of reacting.
• We feel powerless, out of control, devalued, and disconnected.
• We react as if we are in danger and thus perpetuate the cycle by making life decisions with impaired judgment.

ALCOHOL/DRUG USE ABUSE & TRAUMA AND DOMESTIC VIOLENCE

Treatment for alcohol or drug problems must occur prior to or currently with the treatment for IPV. There is no evidence that alcohol treatment by itself will be effective in changing abusive behaviors - however alcohol and drug problems most likely seriously interfere with the process of change and must be addressed.

Treatment for trauma is similar. It must be a focus of an intervention program and/or individual therapy.
Multiple Victimization Factors

- Social Learning
- Trauma Effects
- Genetic Predisposition
- Head Injuries
- Substance Abuse
- Neuropsychological Factors
  (Structural, Neurotransmitters, Genes)

Interactional - Biopsychosocial

In Summary …..

Abused victims and offenders need to be carefully diagnosed to R/O disorders such as PTSD. Abuse and maltreatment, even without PTSD, may be associated with chemical and structural brain changes. While these changes are still under investigation, they appear to have real-life consequences for affect regulation, etc. Assessment can assist with diagnosis, prognosis, and intervention recommendations.


MEASURE OF TBI – Yes to any one of the below

- In the past year, how many times has the following happen to you for any reason?
  - Head injury with loss of consciousness
  - Broken/dislocated jaw
  - Eye injuries
  - Head injury with damage to the ear
  - Facial injuries (e.g., black eye, bloody nose)
  - Dental injuries
- In the past 12 months has your partner ever choked you or did he ever try to choke you?

Measures of Central Nervous System Symptoms

- Dizzy spells
- Memory loss
- Difficulty concentrating
- Headaches
- Blacking out
- Seizures
- Hearing loss
- Ringing in ears
- Vision problems
Why Are Screenings Important?

- Initiates a response to what's done after the screening.
- Connect victims with services and support they need to go about their daily lives and for which they are eligible because of their symptoms and/or injury.
- A positive screen will help establish a probable basis for neuropsychological testing which may ultimately lead to an official, medical diagnosis.

Goals of Brain Based Interventions

- Body regulation
- Emotional balance
- Response flexibility
- Empathy
- Insight
- Modulating fear and anger
- Intuition
- Cognitive restructuring

Adapted from Mary Jo Barrett, 2017

Five Essential Ingredients for Healing

- Attachment and Connection: To build and rebuild relationships where they felt mutual curiosity, compassion, empathy, connecting to a deep set of values that provide a meaningful vision.
- Safety and Empowerment: Safe context/boundaries/structure within and between themselves and their relationships
- Value: Collaboration/Strength based guidance/Vulnerability and Resilience
- Skills: Psycho educational experiences/cognitive behavioral/neuro-mind-body/communication/mindfulness/self-regulation within and between
- Hope: Creation of workable realities

Institute on Violence, Abuse & Trauma (IVAT) at Alliant International University, San Diego
www.ivatcenters.org

National Partnership to End Interpersonal Violence Across the Lifespan (NPEIV)
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International Summit on Violence, Abuse & Trauma Across the Lifespan – Sept 5-9, 2019, San Diego, CA

Hawaii Summit on Assessing, Treating & Preventing Child, Adolescent & Adult Trauma - April 23-26, 2019, Honolulu, HI
16th Hawai`i International Summit
on Preventing, Assessing and Treating
Trauma Across the Lifespan

Hawai`i Convention Center, Honolulu, HI

April 23 - 26, 2019


Summit Tracks

1. Adolescent Trauma/Youth Violence
2. Adult/Elder/Family Trauma
3. Child Trauma/Adverse Childhood Experiences
4. Criminal Justice & Legal Systems
5. Healthcare System
6. Intimate Partner Violence
7. Prevention/Early Intervention
8. Sex & Labor Trafficking
9. Sexual Assault/Victimization
10. Special Topics in Trauma
11. Trauma in Military Personnel, Veterans, & Their Families

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This Summit has become a unique forum for professionals across all disciplines and philosophies to gather for in-depth exchange of current information on all facets of violence, abuse and trauma prevention, intervention and research. We are one of the very few events that include researchers, practitioners, advocates, survivors, and front-line workers from all disciplines to share information, discuss controversial issues, and engage in difficult dialogues. We continue to focus on linking research, practice, policy and advocacy.

Every year the National Partnership to End Interpersonal Violence hosts an Annual Forum where new and returning members alike come together to discuss the goals, methods, and plans of NPEIV in the year to come. Action Team co-chairs will lead think tanks and group discussions that will be shared at the end of the day with the entire Partnership. This is an excellent opportunity to network with professionals from multiple disciplines that are dedicated to helping bring about the end to interpersonal violence.

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