Stress, Early Trauma, PTSD and the Effect on HIV

Susanne Astrab Fogger, DNP, PMHNP-BC, CARN-AP, FAANP
Associate Professor
Conflict of interest

• The speaker has no conflict of interest to declare
Objectives

• Name one aspect of how adverse childhood events effect adults years later

• Identify two physical issues related to chronic stress and PTSD and HIV

• List two management strategies to decrease chronic stress
Treating people with HIV

• Requires more than just treating the virus
• Understanding the role of trauma in keeping people sick
  • Can help teams support the person’s movement toward optimum health
Stress and distress ... What is the difference??

- Normal life stress - psychological and physical reaction to a positive or negative situation like a new job or significant loss

- **Eustress** - positive stress - motivates, & focuses energy, feels exciting & improves performance

- Negative stress – **Distress** - causes anxiety, perceived as outside our coping ability, feels unpleasant & decreases performance
Selye Stress Adaptation Model (1956)

• Three stages
  • **Alarm** – “fight or flight”
    • Increased alertness, mobilize resources & defenses
    • Release of norepinephrine & epinephrine
      • Vasoconstriction, increased BP, increased HR & cardiac contraction
    • If stressor continues & is not adaptively or effectively resolved,......
Selye -- Stress Adaptation Model

• **Resistance**
  
  • Optimal adaptation to stress within the person’s capabilities
    
     • Hormones readjust, reduction in activity and size of the adrenal cortex
     
     • Increased & intensified use of coping mechanisms
     
     • Rely on **defense oriented behavior**, psychosomatic symptoms
• Stage III- Exhaustion
  • Loss of ability to resist stress due to depletion of body resources
• Decreased immune response
  • suppression of T cells and atrophy of thymus
  • depletion of the adrenal glands & hormone production
• Person become disorganize/reality may be impaired
Anxiety related response critical for survival

• Increased noradrenergic and dopaminergic system activation (leading to central nervous system hyperarousal & hypervigilance) facilitates rapid reaction

• The effectiveness of the response **fades** if continuously exposed to stressor.

• Decrease in effectiveness
  • related to the alteration in catecholamine & thyroid systems
  • depressed immune system.
Long term stressors

- Individual increasingly sensitive to subsequent stressors which more easily reactivate the anxiety related response
PTSD risk factors

• Experiencing intense or long lasting trauma
• Experiencing other trauma earlier in life
  • Abused or neglected as child
    • Adverse childhood event (ACE)
• Having other MH problems including anxiety or depression
• Lacking good support system of family or friends
• Being female
• Having a first degree relative with MH problems
Adverse childhood experiences (ACE)

- Includes psychological, physical, sexual forms of abuse
- Household dysfunction: substance use, mental illness, violence & incarceration

- Dose response of 4 or more ACE
  - Increase in HIV risky behaviors
Adverse Childhood Experience  11 item survey

• 1. Lived with anyone who was depressed, mentally ill or suicidal
• 2. Lived with anyone who was a problem drinker or alcoholic
• 3. Lived with anyone who used illegal drugs or abused prescription drugs
• 4. Lived with anyone who served time in a correctional facility
• 5. Experienced parental separation or divorce
• 6. Witnessed parent or adult in the home slap, hit, kick, punch or beat each other
• 7. Being slapped, hit, kicked, punched or beat by parents or adults in the home

• 8. Being swore at, insulted or put down by parents or adults in the home

• 9. Being touched sexually by adult or anyone at least 5 years older than respondent

• 10. Being made to touch sexually an adult or any at least 5 years older than the respondent

• 11. Being forced to have sex with an adult or anyone at least 5 years older than the respondent
Physical Effect of high levels of violence/trauma

• Blunted heart rate variability in response to stress is an indicator of autonomic dysfunction -
  • when stressed- HR increased by 17 BPM less than children matched to their age who had not been exposed to violence
    • cardiovascular risk factor

• Children exposed to high levels of urban violence demonstrate accelerated cellular aging measured by DNA methylation
  • predicts all cause mortality risk later in life
Noradrenergic hyperactivity

• **Excessive noradrenergic output from the locus ceruleus** – autonomic overdrive
  • Central symptoms of anxiety & fear
  • Nightmares, hyper-arousal states
  • Flashbacks and panic attacks
• Excessive noradrenergic activity can also reduce the efficiency of information processing in the prefrontal cortex
Risky behavior --increases risk - Sex workers

- Crystal methamphetamine Injection (CM)
  - Women use at the same rate as men
  - >61% reported sexual physical abuse before age 18
  - Among those who Injected CM 75% experienced abuse
  - Of the CM injection users 25% had HIV
  - Among sex workers, CM- direct effect on sexual desire, also impaired judgment and increased likelihood of unprotected sex and syringe sharing heightening the risk of HIV.

Women, HIV and history of trauma

- 30% of HIV positive women had PTSD
  - 5 X > national sample of women
- 55% of HIV positive women have experienced intimate partner violence – 2 X national rate
- Women account for 27% of all new HIV/AIDS dx
- African American & Hispanic women represent 77%
Childhood sexual abuse (CSA)

- Risk factor for negative mental and physical health outcomes in adults
- Linked to depression, substance use and PTSD
- Among men-having-sex-with-men (MSM)
  - CSA as high as 35.5%
  - Compared to general pop. Estimates of 13.5% of women
    - 2.5% of men
Untreated depression

- Reduction in adherence
  - Complications prevent effective treatment
  - Hopeless
  - More impulsive
  - Careless about own safety
    - Increases disease progression
Strategies

• Visualization, guided imagery & meditation
• Relaxation training
• Decrease unhealthy & self destructive behaviors
• Engaging in hobbies
• Spending time with caring, supportive & optimistic people
• Engage in personal growth activities
Breathing Based Meditation

• Mindfulness practice can help address dissociative symptoms as the person focuses on inner self.
• Training also facilitates neurological changes responsible for the regulation of emotion & positively correlates to anxiety symptom improvement.
• Consistent mindfulness decreases amygdala reactivity
  • fosters greater functional connectivity between amygdala & prefrontal cortex regions.
Breathing exercises

- activates both sympathetic & parasympathetic systems

- Elucidating both alertness & calm

- Increased optimism & general wellbeing
Group therapy – Support and CBT focused

• “Not alone”
• Altruism
• Social connections
• Cognitive behavioral focus - interrupting maladaptive thinking
  • Prevention focus
  • Healthy lifestyle
Common coping techniques

• Problems solving
• Assertiveness skill building
• Positive self talk
• Stress and Anger Management
• Skills needed for communication and relationships
- **Medications**
  - SSRIs – paroxetine, venlafaxine, fluoxetine & sertraline
  - Significantly more effective than placebo
  - May take up to 6 weeks to reach therapeutic blood level
  - Side effects – wt gain, sexual side effects & stigma
  - Pharmacological interventions can be effective
    - About 40 % with PTSD no longer meet criteria for PTSD
Tai Chi

- Ancient Chinese medicine/martial arts
  - Mind-body concept
  - Human body has energy channels –
Yoga

• Yoga based interventions
• Decrease autonomic nervous system activation
• Decreases blood pressure and heart rate
• Participants experience a sense of relaxation
• Post yoga improves GABA levels
• Decrease PTSD hyper-arousal system
• Promotes psychological flexibility and emotional regulation
Yoga Elucidating both alertness and calm

• Increased optimism and general wellbeing
Adjunctive therapies such as yoga, Tai chi and breathing based meditation have a growing evidence base

Sense of improved symptom management, purpose and internal locus of control

Offering individualized patient centered care includes non-pharmacological treatment to augment traditional therapy
Recommendations:

• Given the behavioral consequences of not treating PTSD:
  • Screening for recent and past trauma, PTSD
  • Screening should be part of the core components of HIV treatment
  • Interventions to increase resilience through self-efficacy
  • Increasing access to integrated, trauma informed mental health, addiction treatment and HIV care
Suggested reading:

- The Body keeps the Score Brain, Mind and Body in the Healing of Trauma
  - Bessel Van Der Kolk MD
References


