The Neurobiology of Bravery

How Teaching People to Manage Their Stress Response Can Create More Effective Bystanders

Darlene DeFour, Patti Giggans, Meg Stone
Why do we engage bystanders?
What do we hope they will do?
Some Goals of Bystander Education

- Interrupt sexual assaults
- Challenge abusive behavior
- Challenge actions that perpetuate oppression
- Change or reinforce social norms
- Offer support to survivors
How do we get them to do it?
The Brain on Stress
What is Stress?

- The body’s reaction to circumstances that excite, frighten, confuse or endanger
- A physical response that helps us cope with new situations and challenges
- A normal and essential part of everyday life.

*Trauma First Aide Associates, 2007*
What is Trauma?

- Overwhelming feelings of terror, horror, helplessness, fear, loss of trust, loss of sense of safety, guilt, or shame

- In response to an event that is life-altering, life-threatening, or life deadening.

* Trauma First Aide Associates 2007
## Difference between Stress and Trauma

<table>
<thead>
<tr>
<th>STRESS</th>
<th>TRAUMA</th>
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<td>Symptoms will diminish or disappear soon after the cause of stress is removed.</td>
<td>Symptoms persist after situation is over.</td>
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*Trauma First Aide Associates, 2007*
Stress vs. Trauma

- In stressful situations we return to homeostasis once the stressor is over.

- In traumatic situations people stay stuck on high or low even when the situation is over. People often re-experience feelings associated with the trauma even if the actual threat is over.
How Our Brains Process Trauma & Stress

Limbic System

- Limbic cortex
  - (mood)
- Septal area
- Thalamus
- Hippocampus
  - (memory)
- Amygdala
  - (emotions, such as fear/anxiety)
- Hypothalamus
  - (limbic output)
Axis HPA (Hypothalamus-Pituitary-Adrenal)

*(Cycle of Panic)*

**Amygdala**
(scans the senses for signs of threat, danger, change, or stress)

**Hypothalamus**
CRF (corticotrophin releasing factor)

**Pituitary Gland**
ACTH (adrenocorticotropic hormone)

**Adrenal Glands**
Cortisol (adrenaline, stress hormones)
What is Adrenaline?

Adrenaline is a stress hormone produced in the body when there is a perceived threat or danger.
Adrenaline: The “Stress Hormone”

- Produced by your adrenal glands, this “stress hormone” helps regulate blood pressure and the immune system during a sudden crisis (trauma).

- Chronic trauma or deregulation can keep this survival mechanism churning in high gear, having a negative effect.

- Chronically high cortisol levels can cause sleep problems, a depressed immune response, blood sugar abnormalities, abdominal weight gain, and over long periods of time, can cause damage and cell death in the brain.
Fight, Flight, Freeze Response

- Blood rushes to major muscles
- Heart – may feel heart racing
- Lungs – may experience shorter, faster breath
- Limbs – may be shaky, or feel cold or hot

These are physical sensations that we interpret as fear, anger, stress.
Effects of Adrenaline on Brain Function

- Prefrontal Cortex (controls language and high-order) thinking is most vulnerable to stress hormones
- Stress can cause a decline in prefrontal cortex activities (Arnsten 2009)

- Brain scans of humans under stress show diminished activity in the prefrontal cortex
- Humans under stress default to habitual behaviors
  - Activation of habitual/automatic responses
  - De-activation of complex thinking and decision making (Yu 2016)
How Empowerment Self-Defense Shifts Habitual Responses

- Rehearsing poise under stress
- Practice managing adrenaline response
- Intervention Responses become habitual
Video

[Meg’s video & discussion of bystander skill building]
NOTE: Need slides

- [Patti’s slides about somatic healing]
Exercise
Strong voice & stance
Exercise

Responding to microaggressions
Becoming Brave

Next steps for addressing stress responses in prevention & healing
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