Pain, Psychological Trauma, and Health

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Overview
- Course of presentation
- Overview of the pain system.
- Psychological trauma: key points and intersection with health and pain.
- Intervention and tools for practicing physicians.

The Cost
- 116 million American adults experience some form of Chronic Pain.
- Chronic Pain is more prevalent than heart disease, diabetes, and cancer combined.
- Mood and Anxiety disorders are 7x more likely in chronic pain patients.
- Total cost of Chronic Pain to the U.S. economy = $630 billion annually

Jensen and Turk, 2014

Emotional Pain vs. Physical Pain
- “I can’t take the pain anymore. I wish that I could go to sleep and never wake up”

Emotional Pain vs. Physical Pain
- “It’s like a constant pressure in my head. I can’t sleep, I can’t make love. I tried to leave yesterday to go to the grocery store, and I was suddenly paralyzed.”
The generation of pain in response to injury involves 4 basic elements:

- **Transduction:**
- **Transmission:**
- **Transformation or Plasticity:**
- **Pain perception:**

**Spinothalamic tract.**  
**Spinoreticular tract.**

**Cortical projection:**
Pain as System

- Pain = a psycho-physiological system
  - Comprises a super-system with coordinated activity among the:
    - Nervous system
    - Endocrine
    - Immune
  - All three precipitate the Defense/Stress response. i.e. “Pain Behavior”

Pain System

- “Pain’ thus represents a final integrative package, the components of which consist of neurobiological processes, as well as contextual, psychological, and socio-cultural factors”
  - Cohen & Mao, (2014)

Pain System

- Both emotional distress (i.e. emotional pain) and physical pain activate the same brain regions leading to pain affect, pain behaviors, and the stress response.
  - Rolé of the immune system in physical and psychological distress.

Psychological Trauma

- What is psychological trauma?

What is Trauma?

- “...an experience which within a short period of time presents the mind with an increase of stimulus too powerful to be dealt with in the normal way” –Freud, 1917
What is Trauma?

- “The experience of an event that is emotionally painful or distressful which often results in lasting mental and physical effects.”
  - National Institute of Mental Health

- “Trauma is a psychologically distressing event that is outside the range of usual human experience, often involving a sense of intense fear, terror and helplessness.”
  - Bruce D. Perry, M.D., Ph.D.

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PTSD vs. Complex Trauma

- Complex PTSD results in impairment in developmental processes related to the growth of emotional regulation and associated skills in effective interpersonal behaviors.
  - A Developmental Approach to Complex PTSD, 2009
Stress is essential to adaptation and survival
- If an experience is deemed “traumatic” (i.e. resulting in physiological and psychological dysregulation) or not, hinges on the type of stressor, and post-experience intervention from social support networks.
- Positive stress
- Tolerable stress
- Toxic stress

Sareen et al. (2007).
N=36,984
Participants with PTSD had significantly higher rates of – Chronic pain conditions, upper respiratory, gastrointestinal disease, CFS, Cancer,

ACES Study suggests a score >/=4
- Are correlated to 2/3rd (67%) of all suicide attempts, 65% of adult suicide attempts, and 80% of child/adolescent suicide attempts.
- 500% increase in adult alcoholism and illicit drug abuse
- 260% more likely to have developed Chronic Obstructive Pulmonary Disease.
- (women) 900% more likely to become victims of rape.
- (women) 500% more likely to become victims of domestic violence.
- Doubles the risk for early death (0 aces, 60% live to 65. 4 or more aces, 3% live to 65)
Pain, Trauma, and Health Integration

- Drossman et al. (2000).
  - 50% of women referred to a GI treatment center had been physically or sexually abused.
- Van Houdenhove et al. (2009).
  - 64% of patients with FM or CFS had experienced one type of child or adult abuse—39% had experienced both, indicating a lifelong pattern of re-victimization.
- Asmudson et al. (2002).
  - Up to 50% of patients presenting to tertiary chronic pain clinics satisfy criteria for PTSD—number likely higher when you incorporate trauma that does not meet PTSD criteria.

Takeaways

- Traumatic pain and physical pain are not “connected”—they are one in the same—using the same neurological and nervous system elements.

Intervention and Tools

- Discussion, Questions, Difficult Patients.

Takeaways

- "Toxic Stress/Trauma...can be a direct source of biological injury or disruption that may have lifelong consequences independent of whatever circumstances might follow later in life."
- "In such cases, toxic stress can be viewed as the precipitant of a physiological memory or biological signature that confers lifelong risk well beyond its time of origin."