Neurophysiology of Complex Trauma in the Classroom: Implications for structure, pedagogy, and content

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Overview

• Definition
• Impacted School Related Domains
• Relevant Neurophysiological Impacts
• What I can do

Complex Trauma Definition

• Exposure
  • multiple traumatic events
  • Prolonged, developmentally impacting

• Outcome
  • range of clinical symptomatology that appears after such exposures
Stating the Problem

• 42% of California Children experience 1 or more ACEs
• 1 of 8 US children will be victim of maltreatment by age 18
• Polyvictimization
  – In 1 year period: nationally, almost half of children experienced at least 2 types of victimization
  – Across childhood, 66 percent experienced 2 or more types of violence, 10 percent experienced 5 or more types and 10 percent experienced more than 10 different types of violence
• In one urban California School District
  – 98% of 4th & 9th graders district-wide have had at least one traumatic event. The average is between six and eight events
  – 73% of 5th graders in 1 school alone
  – Across district over 50 percent of students reporting moderate to severe traumatic stress symptoms.

Sociocultural Trauma

• Additionally, students may be affected by historical trauma resulting from societal racism and oppression towards ethnic minorities, particularly African-American, Native American, and immigrant communities.

Typical Domains of Impairment

• Affective
• Behavioral
• Physiological
• cognitive/perceptual, relational
• self-attributional

• Outcome varies in specific form and functional impact across individuals, as well as over time and developmental stage for the same child
Classroom Related Impacts

A look across age ranges

Effects of Exposure to Violence on the Ability to Learn

• lower grade point averages
• more negative remarks in their cumulative records
• more reported absences from school
• increased difficulties concentrating and learning
• may engage in unusually reckless or aggressive behavior

Specific School Impacts

• 30% abused children- language/cognitive impairment
• 50% have school problems – incl. conduct
• 22% have LD
• Lower IQ’s
Cognitive

- Learning problems
- Early delays in expressive and receptive language development
- Deficits in Verbal, compared with non-Verbal (Performance) IQ
- More difficulty with problem-solving
- Information processing difficulties, especially verbally
- Deficits in ability to take on multiple or different perspectives
- Difficulties with sustained effort
- Attentional difficulties

Physiology

- Trouble regulating the body (sleeping, eating)
- Physical complaints
- Hyperarousal – “ADHD-like, quick startle response, edgy”
- Hypoarousal – Numbing, Disconnect
- Swings in arousal, explosive
- Hypersensitive to your affective states

Self Identity/ World View

- I do not belong – world, academically
- World is unpredictable
- I am bad, at fault, wrong
- People are not to be trusted
School as Protective Factor

- The involvement of the school is critical in supporting students through the emotional and physical challenges they may face following an exposure to a traumatic event
- The presence of a consistent caring adult

Hierarchical Development of Brain

- “Reptilian” Brain
- Limbic Brain
- Neocortical Brain
Development and the Brain

- A toddler or preschool-age child is developing brain capacities necessary to modulate emotions in response to stress
- In middle childhood & adolescence the most rapidly developing brain areas include
  - orbital prefrontal cortex
  - dorsolateral prefrontal cortex
- In adolescence, there is a burst of brain development in these areas and the limbic system due to myelination

Lack of Integration

- Lateral
- Vertical

- Impact:
  - Inflexibility
  - Learning – social, cognitive
  - Emotional “Intelligence”

Neorophysiology of Chronic Trauma

- Decreased volume
- Hemispheric Influences
  - Hemisphere underdevelopment
  - Less hemispheric integration
- Limbic System Differences
- Sensitization of ANS
- HPA axis / Cortisol level differences
- Neurotransmitters
Levels of Information Processing

- Cognitive
- Emotional
- Sensorimotor
  - Inner-body sensation (interoceptive)
  - Five-sense perception (exteroceptive)
  - movement

APPLYING PRINCIPLES IN THE CLASSROOM

Trauma Informed Schools

- six core attributes (Trauma and Learning Policy Initiative)
  - Shared understanding among all staff; a whole-school approach to trauma sensitivity
  - Safety for all children – physical, social/emotional and academic
  - In addressing students’ needs, consideration of their relationships, self-regulation, academic competence and physical and emotional well-being
  - Connection of students to the school community and opportunities to practice new skills
  - Embraced teamwork and shared staff responsibility for all students
  - Leaders’ and staff members’ anticipation of and adaptation to students’ ever-changing needs

- Compassionate Caring / Acceptance/ Curiosity
- Cultural Humility/ Social Justice
Structure Recommendations

• Create Calm, predictable transitions
  – 5-10 min beginning and end of class on affect regulation
  – Brain breaks or mental distraction breaks
• Maintain predictable routines
• Clear and posted expectations and goals
• Visually Post Rules and Schedule
• Have lesson plans and unit plans
• Visually post “road map” of unit plan

Pedagogy Recommendations

• maintaining expectations for the student that are consistent with those of his/her peers
• Utilize multiple modalities of teaching and expressing understanding of content
• Combine right and left brain activities
• Utilize limbic system
  – combine academic content with speed or time pressure
• Utilize ANA/HPA in learning activities
  – Start/stop; speed changes

Content Recommendations

• See themselves
  – Multicultural content
• Historical Trauma/ Social justice
• Stress and the Brain
• Explicit SEL and affect regulation instruction
• Personalized learning
  – discover and build on the student’s individual interests and competencies
Behavioral Management

- Co-regulation: SELF CARE
- Recognize that a child is going into survival mode and respond at amygdala level
- Behavior as communication (ignore content)
- Make praise regular, concrete, and specific
- Criticize privately
- Adapt your classroom’s mindfulness practice
- Delay consequences until calm
  - include student
  - Make “natural”
- Your response should be in service of connection

Affect Modulation Tools

- Soothing/Calming
  - Breathing (e.g. square)
  - Progressive Muscle Relaxation
  - Stretches
  - Yoga
  - Grounding skills
  - Visualization
- Expanding
  - Grounding
  - Mutual engagement
  - Physical activity
- Use sensorimotor system for affect regulation

Resiliency Factors

- Positive attachment to emotionally supportive and competent adult
- Cognitive & self-regulation abilities
- Positive beliefs about oneself
- Motivation to act effectively (behavior control)
When to refer

- Protective referral
  - Suspicion of abuse
- Therapeutic referral
  - High number of symptoms
  - Dangerousness
  - Interruption of functioning
  - Duration
  - No change with current intervention