Deconstructing Trauma: trauma neuroscience for educators

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National Child Traumatic Stress Network (NCTSN) Sites

Category I - National Center

Category II – Intervention, Development, and Evaluation Centers

Category III – Community Treatment and Service Centers

FY01-02 – Member Centers

Arvidson, 2017
Complex Trauma Treatment Network (CTTN)

Complex Trauma-Informed (CTI) Systems of Care Initiatives

- Core Concepts
- Trainer Training
- CTI Strategic Planning
- CTI Organizational Evaluation
- Screening & Detection
- EBP Adoption & Dissemination (TARGET, ARC and SPARCS)
- Contextual Adaptation of Assessment & Treatment Materials & Resources
- Sustainability Planning

National Coordination & Training Center, The Trauma Center at Justice Resource Institute (CTTN Director: Joseph Spinazzola; Co-Director: Bessel van der Kolk; Project Coordinator, Hillary Hogden.
Lead Trainers: Margaret Blaustein & Kristine Kinniburgh

Northeast Regional Training & Technical Assistance Center, University of Connecticut (Co-Director: Julian Ford)

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Southern Regional Training & Technical Assistance Center, DePelchin Children’s Center (Co-Director: Robert Hartman)

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Training Faculty: Mandy Habib, Robert Abramovitz, Monique Marrow, Ibis Carrion Gonzales, Rocío Chang, Laurel Kiser, Danielle Ferrier.
Physiology of Trauma
Brain process under typical conditions

Observe → Input → Interpret → Process → Evaluate Options → Plan → Act

Arvidson, 2011
Alarm system
“Express Route”

Observe → Interpret

React (Flight - Flight - Freeze)

Process
Evaluate Options
Plan

Act

Arvidson, 2011
With repeated stress, the Alarm System "Express Route" becomes the main road.
Area of Scientific Advancement
Physiology of the Human Stress Response

- **THREAT**
  - Activation of Threat Appraisal and Response System
  - Increased Limbic System Activity
  - Alarm system “flood”

- **SURVIVAL RESPONSE**
  - Fight, Flight or Freeze
  - Survival Oriented Behavior

- **POST-STRESSOR**
  - Continued Arousal
  - Difficulty Modulating
Adaptation of Brain Processes and Structure
- Physiological Changes in Brain Structure and Function, Decreased Volume of Amygdala and Hippocampus, Prioritization of Stress Pathways

Chronic Exposure to Stress Hormones
- Significant challenges to Regulatory Capacity, Dysregulation, State and Trait Characteristics.

Physiological Adaptations
- Hypervigilance, Hyper and Hypo Arousal, Survival (as opposed to developmental) based orientation. Trauma turns a learning brain into a surviving brain.

Arvidson, 2013
Discussion Questions

• Have you had students who operate in reactive/alarm system mode?
• In what situations or conditions was that mode triggered?
• What was helpful for that student?
James

Vignette 1
Binding of Memory Elements

The hippocampus is involved in integration of memory elements into unified memory.

Memory of a Tree

- Feel of bark
- Green
- Smell of pitch
- Sound of leaves rustling
Smell of clothes
Smothered feeling
Sound of a clock
I’m afraid
Dark place
Stress and Splintered Memories

Hippocampal dysfunction in PTSD may lead to abnormalities in normal integration of diverse memory elements into unified memory.

Dark place

Smell of clothes

Smothered feeling

Sound of a clock

I’m afraid
Trauma: Alarm system activates

Dysregulation generalizes

Confirmation that world and experience is overwhelming

Internalization of overwhelming experience (There is something wrong with me)

Behavioral adaptation increases risk for re-exposure

The Reproductive Cycle of Trauma: How Trauma Perpetuates Itself

Arvidson, 2016
Attachment allows children to safely explore the world and provides a healthy model for self and others.

Attachment is the dance of the limbic systems of the child and parent.

- Allan Schore
Internal Representational Models

Bowlby model delineates formation of Internal Representational Models:

– Model of SELF
  • e.g., “I am worthy or competent”; “I am unworthy or incompetent”

– Model of OTHER
  • e.g., “Others are reliable or trustworthy”; “Others are unreliable or untrustworthy”

– Model of SELF IN RELATION TO OTHER
  • e.g., “Others will respond to my needs”; “Others will not respond to my needs”

These models form the basis (“working models”) for future relationships.

Blaustein, 2005
What is “Complex Trauma”?

• Dual Definition:
  – Exposure to multiple traumatic events, frequently within a caregiving system that is supposed to be the source of safety and stability
  – Impact of those events, across domains of development, on both immediate and long-term outcomes
The fundamental problem of chronic exposure to traumatic experiences in childhood is that overwhelming stress turns a learning brain into a surviving brain.

But, the brain and the physiological impact of trauma, is only the beginning of the story. Development is the context in which the impact of childhood trauma is fully realized...
...The developmental necessities of childhood: formation of healthy attachments and social development, attentional capacity and cognitive development, mastery, competency, and regulation, (the ability to control one’s body, emotions and behaviors) are compromised by chronic exposure to overwhelming stress...
...Childhood trauma can be understood, fundamentally as developmental derailment. Thus, trauma-informed care for children is about helping the child and parent “put the train of healthy development back on the tracks.”
…Trauma-informed care is about helping children and families chart new developmental trajectories that promote healthy development, build resiliency and restore functioning.

- J. Arvidson
Areas Impacted by Complex Trauma

- Physiology and brain development
- Control impulses and concentrate
- Safely negotiate conflict and differentiate safe from unsafe
- Form a positive and cohesive sense of self
- Tolerate, control and express emotions and sensations
- Form healthy attachments and social relationships
- Learn and engage in goal-directed behavior

Study Conditions: Complex Trauma Treatment using ARC Framework at a clinic serving predominantly child welfare involved clients.
ARC Framework

Competency
- Relational Connection
- Executive Functions
- Self-Development & Identity

Regulation
- Identification
- Modulation

Attachment
- Caregiver Affect Management
- Attunement
- Effective Response
- Engagement
- Psychoeducation
- Routines & Rituals

Graphic by Jeremy Karpen; Blaustein & Kinniburgh, 2010; Kinniburgh & Blaustein, 2005
Treatment of Complex Trauma in Young Children: Developmental and Cultural Considerations in Application of the ARC Intervention Model

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The Attachment, Self Regulation, and Competency (ARC) Framework is a theoretically grounded, evidence-informed, promising practice used to treat complex trauma in children and adolescents. This article introduces the ARC model and describes its application with young children of diverse ethnocultural backgrounds involved in the child protection system due to maltreatment. Examination of the clinical application of the ARC model with this population underscores the importance of grounding child complex trauma treatment in the caregiving system. Strategies for successful clinical intervention are identified, with attention devoted to cultural and systemic resources to advance the treatment process. This article presents preliminary evidence of the effectiveness of the ARC model derived from program evaluation conducted at a community-based clinic.

Keywords: complex trauma, attachment, regulation, trauma, ARC

Early development takes place largely within the context of the caregiving relationship. The impact of trauma on infants and young children is unique because it occurs within a critical developmental period and is vastly influenced by the nature and quality of the caregiving system (Scheeringa & Zeanah, 2001). The primary attachment system provides the security and safety necessary for children to master an array of competencies including the ability to self-regulate (Schore, 2001a), develop positive relationships (Schneider, Atkinson, & Tardif, 2001), and acquire cognitive skills relevant to learning (Meins, Fernyhough, Russell, & Clark-Carter, 1998). Additionally, it provides the foundation for self and identity formation (McCarthy, 1998).

When the caregiving relationship is characterized by uncertainty, unpredictability, or fear, it affects a child’s basic sense of safety within relationships and in the world (Hease & Main, 2006). Young children's sense of themselves develops within the context of their perception and internalization of the relationship with their caregiver. If a child’s perception...
Alaska Child Trauma Center
Child Trauma Clinical Outcomes Study
CBCL Score Changes with 1–year Complex Trauma Treatment (Percentile)
CBCL (T-Scores) at Completion of Treatment

- CBCL NCTSN
- AK Trauma Center

Baseline vs. Trx Completed
Population Attributable Fraction

Source: 2013-2015 Alaska BRFSS, Section of Chronic Disease Prevention and Health Promotion, Alaska Division of Public Health, Graphic by Alaska Mental Health Board Staff
Population Attributable Fraction
