Trauma Informed Care

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DON'T BELIEVE EVERYTHING YOU THINK
What is Trauma Informed Care?

• National trend related to intervening effectively with many populations, including children.

• Is a paradigm shift
  – Our intervention changes from:
    • What’s wrong with you? TO
    • What happened to you?
Advances in studies on brain development

• In the past, it was theorized that the brain developed on a genetic/molecular level.
• New science reveals cerebral metabolism, blood flow, & electrical activity influence brain development.
• Measures of neuroanatomy & neurochemistry indicate development is on a neural and behavioral level.
Advances in studies on brain development

Neurological development is hierarchical in nature – it develops from the simple to the complex.

Healthy development of more complex areas of the brain depends upon the quality of development in the earlier, less complex systems.

Evidence suggests the brain has the ability remain plastic and responsive to new experience throughout life, however early childhood experience is particularly significant because the organization of the neuro-network and structure of the brain are still in its formative stages.
The Human Brain is designed to make it possible for us to survive, procreate, and become caregivers. The primary function of any species brain is to ensure the continuation of our species.
The only thing that a neurotransmitter does directly is to trigger one or more types of receptors. The effect on the postsynaptic cell depends entirely on the properties of the receptors.
**Neurotransmitters**

**Glutamate**: used as a trigger in over 90% of the synapses in the brain. Plays an important role in memory, vision, & learning.

**GABA**: used in 90% of the synapses that don’t use glutamate. GABA circuits reduce anxiety & relax muscles.
Are you in the mood?
Neurons and Neurotransmitters

Discovery Health

Neurons & Neurotransmitters

Site address:
http://www.youtube.com/watch?v=DF04XPBj5uc&feature=related
LEARNING or "Making Memories"

To create a memory (or to learn something) 3 things need to happen:
1. We have to “sense” an experience
2. We have to “process” the experience
3. We have to “store” the experience
Sensing “Information”

• The senses help keep us alive. The brain uses the sensory organs (eyes, ears, nose, tongue, skin) to alert us to our surroundings.

• **Everything** we experience is filtered by our senses.

• When a signal is received by one of our senses (sound, sight, taste, touch, smell), a surge of processes occur in the brain that alter brain structure and function.

• The more frequently a certain pattern of neural activation occurs, the more indelible the memory becomes.
• Once our sensory organs have detected physical or chemical information from the outside (or inside) world, this set of signals travels up into the brain to be processed.

• Sensory information enters the central nervous system at the level of the brainstem and midbrain.

• As this primary sensory input arrives, it is matched against previously stored patterns of activation.

• If the pattern is unknown, or is associated with previous threat, the brain will activate a set of responses that are designed to help promote survival.
How the brain processes

- The brain doesn’t like surprises.
- Present and future experiences are matched to memories connected to various sights, sounds, smells, tastes, and movements.
- All unknown or unfamiliar information is judged to be threatening until proven otherwise.
- What we know as “safe and comfortable” has only become so through our experience.
- Something in your “safe and comfortable” present moment matches the associated, stored memories of previous safe, pleasing, or rewarding experiences.
Storing Information

• Storing *internal representations* of the external world is essential to our *survival* neurobiology. These are what we know as memories.

• Neuron and neural system changes are "use-dependent".

• They only change if a new or extreme situation forces them. “Nothing changes until something changes”
The Mind/Body Connection

- Our *perception* of the world and our interactions define our reality.
- Our brain processes messages based on our perceptions and responds accordingly.
The Stress Response

• When the brain senses threat the body responds automatically.
• The adrenal gland releases a chemical weapon called cortisol. Too much cortisol can prevent the brain from laying down a new memory, or from accessing already existing memories.
• The hippocampus is the area of the brain most damaged by too much cortisol.
STRESS & BABOONS

- Dr. Robert Sapolsky
  http://www.youtube.com/watch?v=sPS7GnromGo
Fight, Flight, or Call a Girlfriend?

New Research on stress - Gender Differences

- Females release high levels of oxytocin under stress. Males do as well but it is suppressed by testosterone.

http://www.thecenter.ucla.edu/mindbody.html
The Hippocampus and Memory

- **The Hippocampus** is critical to the process of learning. It takes short-term memory and converts it into long-term memory.
- Various hormones (e.g., cortisol) appear to alter hippocampus synapse formation, causing actual changes in overall structure & size.
- Repeated stress inhibits the development of neurons and atrophy of the hippocampus can occur.
The Brain, Neural Systems, & Fear

- **Amygdala**: the key brain region in the processing, interpreting, and integration of emotional functioning.
- The amygdala processes and determines the emotional value of simple sensory input, complex multisensory perceptions, and complex cognitive abstractions.
- The amygdala orchestrates the response to this emotional information by sending projections to brain areas involved in motor (behavioral), autonomic nervous system, and neuroendocrine areas of the CNS.
- **Cortex** - where the brain subjectively interprets the quality and intensity of any emotion, including anxiety.
Recalling Traumatic Events

- The brain doesn’t record a memory of a traumatic event the same way it does normal events.
- At the time of fear, powerful neurochemicals flood the system. These chemicals are designed to trigger the fight or flight response.
- The autonomic response of the brain is designed for survival, not thought processing.
- It is not unusual for victims to have fragmented memories of the traumatic event. The memories are often out of sequence, and filled with gaps.
- This knowledge is especially important in working with victims or doing advocacy work!
• The developing brain is particularly sensitive to stress/fear. (Child Trauma Academy www.childtrauma.org)
• Neural systems that are activated in a repetitive fashion can change the brain in permanent ways, altering synaptic number and microarchitecture of the brain
• The brain is use dependent!
• The traumatized child frequently has significant impairment in social and emotional functioning.
• Hyper-vigilant children frequently develop remarkable non-verbal skills in proportion to their verbal skills (street smarts).
• They often over-read (misinterpret) non-verbal cues.
• Eye contact is read as a threat, or a friendly touch is interpreted as an antecedent to seduction and rape. These assessments might have been accurate in the world they came from.
Implications for Practice


Combining theory with facts and moving forward
• Things we should know:
• Trauma over activates the survival part of the brain.
• Behaviors may be a direct result of this actually “normal” according to the needs of the brain.
• The brain is a patterning organ -
Patterning & Security

• Discussion…