Trauma Informed Practice: Impacting ACEs in Maternity Care

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Agenda

Understanding the Impact of Trauma: The Brain Science

Applying the "ACEs Questionnaire" in Maternity Care: An Alberta & BC Perspective

What Next: An Interactive Discussion

Objectives

Understand how the developing brain is affected by trauma and neglect

Appreciate how an history of trauma affects caregivers and attachment

Learn how to use the ACEs Questionnaire in your practice

Pathways to Healing Partnership; Vancouver Island Demonstration Project

* Funded by the Children's Health Foundation of Vancouver Island, Island Health and MCFD

- Small caseload of complex families
- & Grounded in Dr. Bruce Perry's Neurosequential Model of Therapeutics and Touchpoints
- * Facilitate system change through the experiences of our clients
- *Working intensely, sometimes daily, with each family, building a therapeutic web of care
- Reduce stress, increase supports to expose caregiver strengths.
- Maintain and support healthy dyads.
- Educate community partners who are supporting family

Mismatch between Investment and Opportunity



HOW WONDERFUL IT IS THAT WE NEED NOT WAIT A SINGLE MOMENT BEFORE STARTING TO CHANGE THE WORLD.

- ANNE FRANK

www.fusionyearbooks.com



Neurosequential Model

It is important to understand mechanisms underlying current functioning

Your understanding determines your solution

- Stuart Ablon (CPS, 2010)



Neurosequential Model

Each person has a unique pathway to the present and deserves individualized care

"One-size fits all" approaches rarely meet the needs of the individual – more often they meet a need of the provider (or system)



Neurosequential Model

The brain mediates our thoughts, feelings, actions and connections to others and the *World* Understanding core principles of neuroscience, including neuroplasticity and neurodevelopment, can help us better understand ourselves and others



On information from the external and internal world to promote survival, procreation, affiliation and nurturing of dependents

Sequential Neurodevelopment

The brain is undeveloped at birth

The brain organizes from the "bottom" up brainstem to cortex and from the inside out

Organization and functional capacity of neural systems is sequential

Experiences do not have equal "valence" throughout development



Sequential Sensory Processing

* All sensory input from the outside world first enters the brain at level of the brainstem or midbrain.

The process of "matching" against the templates of previous neural patterns begins at these levels.

The brainstem, midbrain, and limbic systems may start "acting" on incoming information even before the it reaches the cortex.

What is Trauma?

Trauma is an event defined by the National Child Traumatic Stress Network (NCTSN):

"extreme events that are threatening to physical safety or bodily integrity of oneself or loved one"

Acute Trauma and Complex Trauma as defined by the Child Traumatic Stress Network (NCTSN):

- Acute Trauma: is a single event that is limited in time such as a car accident or terrorist attack
- Complex Trauma: is the exposure to a traumatic event and the subsequent development of a trauma reaction. Complex trauma can also be magnified by the trauma having been perpetrated or abetted by caregivers charged with protecting and caring for a child

What is Traumatic?

The same event can be experienced, adapted to, and carried forward in different ways by different children.

So, it is the response by the individual to the experience or event that is "traumatic" – not the event itself.

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Abstract thought **Concrete Thought** Affiliation/reward "Attachment" **Sexual Behavior Emotional Reactivity Motor Regulation** "Arousal" Appetite/Satiety Sleep **Blood Pressure** Heart Rate **Body Temperature**





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First Memories

In utero the most dominant repetitive sensory experience is the ever-present maternal heart beat, and the related opening/closing of valves.

- This powerful rhythmic pattern becomes associated with warmth, comfort, quiet, satiety and safety.
- The Primary Organizing Rhythm (POR) of the developing Brain is 60-80/bpm and multiples thereof.

Memory and Templates

The brain matches all incoming sensory signals against previously-stored patterns

- This matching begins at the first set of synaptic connections in the brainstem
- Patterns of neural activity that are familiar are categorized
- Patterns that are novel cause arousal and focus attention -sometimes even alarm

Association

The brain makes associations between patterns of neural signals co-occurring in any given moment in time

- This capacity allows humans to learn, create images of the future and survive
- This capacity can also make humans vulnerable to false associations – e.g., creating fears of non-threatening objects
- Association is at the heart of understanding attachment, good and bad, as well as trauma-related symptoms

The importance of caregiving



I may be small but I feel it all...



Where it begins?

Maternal post-partum behavior is the mechanism upon which the cross generation transmission attachment bond is built.

- Oxytocin is a bio-feedback loop: more touch and attunement causes oxytocin release and vise versa.
- Maternal Behavior shapes infants oxytocin system=the ability to connect
- Maternal Behavior shapes the cortisol system=the ability to handle stress

A newborn baby's world in one month.....

Feeding 300 times....slowly reduced to 180 times

Diaper Changing 140 or more

- Changing clothes 90 times
- Face to face interaction or gaze 120 times
- Toy play 180 times
- Social Games 90 times
- Cuddling 150 times
- Wake up and soothed 150 times
- Cries and soothed 140 times

Why Early Intervention...

Neurons that fire together wire together!

Development is not a blank slate

Timing of insult will have different effects

Babies are face experts, with-in minutes of birth, they seek a response from the mouth as a neurological preparation for language, and the eyes for a gaze that signals connection

Feeding is one of the first human caregiving interactions that begin a process of synaptic connections about the safety and protection that exists in the caregiving relationship

Neglect





What is a neglected child? He is a child not planned for, not wanted. Neglect begins, therefore, before he is born.

— Pearl S. Buck —



We are neglecting our greatest biological gifts.....

Relationships...the modern world is relationally disrespectful

The brain's malleability in early childhood

The relational landscape is changing.....

Children have fewer emotional and social and cognitive interactions with fewer people

- The impact of the "modern" life on the developing child is yet to be understood
- Our brains have not evolved as fast as technology
- Fragmentation of experiences...less face to face interactions, more screen time

Modern world vs. hunter gather society

- Today's typical child is getting 1/20th of the relational interactions that a child growing up in a hunter gather clan. This is the average child, many are getting even less than that. This means that their neural networks are getting 1/20th the repetitions that it should for them to reach their genetic potential.
- Remember the brain develops in a use dependent way, so this means that development is not happening at the rate it should. This leads to relationally immature adults.

Why does this matter?

Soth the stress response system and the reward system in your brain are shaped by relationships in early childhood-both in healthy and unhealthy ways

Relationships have a key role in global health, creativity, and productivity of a group

A Neurodevelopmental Definition of Neglect

Lack of a specific pattern of experience during development results in abnormal development of a core brain function

The abnormal development is in those brain systems which sense, perceive, process, "interpret", and "act on" information related to that specific experience or input

Sensory Deprivation

Absence of sight, sound, touch, taste, smell -and meaningful combinations of these sensations

The somatosensory bath of early childhood provides the major sensory cues responsible for organizing key areas in the brain

Absent these sensory experiences, abnormal development results

3 Year Old Children











Intervention Following Neglect

- The earlier the better
- No part of the brain will change in an organized way unless it is activated
- Many of the primary areas of deficit are in the brainstem, diencephalon and limbic areas
- Repetitive, specific and sequential experience can recapture potential




Hx severe early dev abuse and neglect; adopted at 10 mos of age

DSM IV Dx at time of eval:

ADHD, Oppositional-Defiant Disorder, Conduct Disorder, r/o Major Depressive Disorder

Developmental Neglect & Trauma: Through first 10 months – Currently Age 13









M.; 6 yo M

Hx intrauterine SA/EtOH; severe neglect and abuse; removed at 12 mos; multiple placements; adopted at age 2

DSM IV Dx at time of eval:

Oppositional-Defiant Disorder, ADHD, r/o Bipolar Disorder

Developmental Neglect & Trauma: Through Age 2 – Currently Age 6









T. D.; 13 yo M

Hx severe abuse/neglect; adopted at age 5

DSM IV Dx at time of eval:

ADHD, Conduct Disorder, Bipolar Disorder

Developmental Neglect & Trauma: Through Age 5 – Currently Age 13





Word Gap: Number and Nature

560,000: Times a child from a professional family receives positive feedback before age four 100,000: Times a child from a working-class family receives positive feedback before age four

2,153: Words per hour a child from a professional family hears
616: Words per hour a child from a family on welfare hears

Sources: Atlantic, Boston Globe; LENA Natural Language Study, 2008



Activity-dependent Neural Differentiation

- Neurons are designed to change in response to patterned repetitive stimulation
- During development, patterns of activity determine patterns of synaptic connectivity and, thereby, functional capacity
- In adults, activity can alter pre-existing neural organization - in children, activity literally provides the organizing framework for the developing brain
- Experience is the 'general contractor' acting on the genetic and epigenetic blueprints we inherit.



USE-DEPENDENT DEVELOPMENT

The more a neural system is "activated," the more that system changes to reflect that pattern of activation

<u>This is the basis for development,</u> <u>memory and learning</u>

John Mayer "In the Blood"

This song is illustrates the power of familial patterns of trauma, what science refers to as epigenetics. It is a great song to get people thinking about how we might change the patterns of trauma and toxic stress in order for us to change our lives and find the love we want.



State Dependant Functioning.....



Bonding behaviors decrease when caregiver is overwhelmed or distressed

With increasing threat and distress, an individual's capacity to give to others is diminished

– B.D. Perry



The "Learning" Window: State Dependence





The Flock, Freeze, Flight, Fight Continuum

- The combined neurophysiological responses to a real or perceived threat involves a total body mobilization involving the brain (CNS) and the neuroendocrine, neuroimmune and autonomic nervous system (ANS)
- The brainstem and diencephalic nuclei and their neural networks involved in these critical adaptive responses play a major role in symptom expression following trauma.
- This set of responses is intact and active in young children. The hormones and neurotransmitters involved in the stress response play a key role in modulating the process of neuronal differentiation.



Response to Threat

Dissociation

Disengage outside Numb Compliant Suspension of time De-realization 'Mini-psychoses' Fainting

Hyperarousal

Hypervigilance Reactive Alarm response Tachycardia Freeze: Fear Flight: Panic Fight: Terror









Adaptive Response	REST	VIGILANCE	FREEZE	FLIGHT	FIGHT
Predictable De- escalating Behaviors (behaviors of the teacher or caregiver when a child is in various states of arousal)	Presence Quiet Rocking	Quiet voice Eye contact Confidence Clear simple directives	Slow sure physical touch "Invited" touch Quiet melodic words Singing, humming music	Presence Quiet Confidence Disengage	Appropriate physical restraint Withdraw from class TIME!
Predictable Escalating Behaviors (behaviors of the teacher or caregiver when a child is in various states of arousal)	Talking Poking Noise Television	Frustration, anxiety Communicate from distance without eye contact Complex, compound directives Ultimatums	Raised voice Raised hand Shaking finger Tone of voice, yelling, threats Chaos in class	Increased or continued frustration More yelling Chaos Sense of fear	Inappropriate physical restraint Grabbing Shaking Screaming
Regulating Brain Region	NEOCORTEX Cortex	CORTEX Limbic	LIMBIC Midbrain	MIDBRAIN Brainstem	BRAINSTEM Autonomic
Cognition	ABSTRACT	CONCRETE	EMOTIONAL	REACTIVE	REFLEXIVE
STATE	CALM	ALERT	ALARM All rights reserve	FEAR d © 2007-2015 Bruce D. Perr	TERROR



States become Traits

Persisting activation of the neurophysiology of threat "re-sets" homeostatic equilibrium Persisting hyperarousal = altered noradrenergic systems Persisting dissociation = altered opioid and dopaminergic systems

The best time to influence the character of a child is 100 years before they are born. W.R. Inge





Developmental lag – the younger you are, the easier it is tolerate the "lag"





Developmental lag – as you get older, the skills "lag" becomes viewed through various lens – (e.g., ADHD, oppositional defiant, "reading" disorder)





Developmental lag – and, ultimately, these skill "lags" can result in- and are viewed as - 'anti-social' or even criminal.

Impact of prolonged trauma

*****Being in a state of fear for prolonged periods of time may present as:

- Impulsive
- Hyper vigilant
- Hyperactive
- Withdrawn
- Depressed
- Anxious
- Regressive behavior
- Sleep difficulties
- Acquire new developmental tasks at a slower rate

Often meet criteria for:

• ADHD, Anxiety Disorder NOS, Major Depressive Disorder, Conduct Disorder/Oppositional Defiant Disorder, Attachment Disorders

Sequence of Engagement





History of Relational Interactions





HARDSHIPS OFTEN PREPARE ORDINARY PEOPLE FOR AN EXTRAORDINARY DESTINY...

C.S. LEWIS

ACE Study: Why it is Relevant

Adverse childhood experiences are the most basic cause of health risk behaviors, morbidity, disability, mortality, and healthcare costs

More than six adverse experiences is correlated with:

- The development of serious health, behavioral, psychiatric and potentially life-threatening illnesses
- A life span shorter by an average of 20 years (60.0 years versus 79.1 years)

www.cdc.gov/NCCDPHP/ACE



Categories of "Adverse Childhood Experience" (ACEs)

- Emotional Abuse
- Physical Abuse
- Sexual Abuse
- Emotional Neglect
- Physical Neglect
- Family Violence
- Household Substance Abuse
- Household Mental Illness
- Parental Separation or Divorce
- Household Member Incarceration

The ACE Score is NOT:

-A fun "quiz" -A diagnostic assessment -A screening test

Instead...

It is a <u>history tool</u> to promote understanding, dialogue, and a narrative about the impact of ACEs...



Robert F. Anda · Vincent J. Felitti · J. Douglas Bremner · John D. Walker · Charles Whitfield · Bruce D. Perry · Shanta R. Dube · Wayne H. Giles

The enduring effects of abuse and related adverse experiences in childhood

A convergence of evidence from neurobiology and epidemiology

Area of function or dysfunction studied	Demonstrated neurobiological defects from early trauma	ACE study findings
Anxiety, panic, depressed affect, hallucinations, and substance abuse	Repeated stress & childhood trauma \rightarrow hippocampus, amygdala & medial prefrontal cortex atrophy and dysfunction that mediate anxiety & mood problems	Tables 2 and 3 Unexplained panic, depression, anxiety, hallucinations & alcohol & other drug problems
Smoking, alcoholism, illicit drug use, injected drug use	Repeated stress & childhood trauma → Increased locus coeruleus & norepinephrine activity, decreased by heroin & alcohol	Table 3 Increased smoking, alcohol and other drug use
Early intercourse, promiscuity, sexual dissatisfaction, perpetration of intimate partner violence	Repeated stress & childhood trauma → amygdala defects; role in sexual & aggressive behavior and deficits in oxytocin with impaired pair bonding	Tables 3 and 5 Risky sexual behavior, anger control, risk for aggression against intimate partners
Memory storage and retrieval	Hippocampus role in memory storage and retrieval; hippocampal & amygdala size reduction in childhood trauma; deficits in memory function	Table 4 Impaired memory of childhood and number age periods affected increases as the ACE score increase
Body weight and obesity	Repeated stress & distress, via glucocorticoid pathways, leads to increased intra-abdominal & other fat deposits	Table 2 Increased obesity
Sleep, multiple somatic symptoms, high perceived stress	Repeated stress & distress, via several pathways, leads to increase in other physical problems	Tables 2 and 5 Increased somatic symptoms and disorders, including sleep problems
Co-morbidity/Trauma spectrum disorders	Multiple brain and nervous system structure and function defects, including monoamine neurotransmitter systems	Fig. 1 The graded relationship of the ACE score to psychiatric and physical symptoms or disorders, including multiple co-occurring problems (comorbidity)

Table 6 Summary of the convergence between neurobiological effects of childhood maltreatment with ACE study epidemiological findings



Riley Park Maternity Clinic

Dr. Teresa Killam's Slides Used with Permission




Phase I: Collaboration between CFPCN and AFWI

- Small Feasibility Project with 30 patients
- Developed Process tools
 - Patients
 - Maternity Physician
 - Referring Physician
 - Clinic Staff

Adverse Childhood Experiences (ACEs) and Their Effects on Your Health

We have asked you about ACEs as part of your routine, comprehensive care. Adversity is negative, depressing and upsetting. Trauma is traumatic. But understanding ACEs and their impact is amazing, incredible, medicinal, healthful and hopeful. We know ACEs are common, can affect how the brain develops, and increase a person's risk of having physical, mental or emotional health problems throughout their lifespan. But remember, this is a risk factor, and it's never too late to decrease your risk! Here are some resources and strategies for you to consider.



Phase I: Small Feasibility Pilot

- o Take Home Messages:
 - ACE questionnaire is a tool
 - The intervention IS a Trauma-Informed Care response
 - Making it ROUTINE increases acceptability
 - Little to no impact on clinic flow
 - Patient Responses

Phase I: Feasibility Pilot Patient Responses

"When the doctor asked about your adverse childhood experiences history, how did it make you feel?" (n=22)



ACES are not Destiny

A history of Adverse Experiences does not mean that person is broken. Healing from Adverse Experiences is very possible and desirable.



Phase II: Expansion

- Routine ACE Score History Taking by 43 MDs
- Education and Awareness
 - Street Credit/Peer Support, CME, Lunch and Learns
 - Resources on CFPCN Website
 - Discussion at Group Meetings
 - Clinic Process
 - Trial 20 minute appointments reversed back to 10 minutes after 3 months
- Patient Questionnaire, Physician Survey, Staff Survey





Adverse Childhood Events

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TRAUMA INFORMED CARE LEARNING MODULE (1 HOUR)

ALBERTA FAMILY WELLNESS INSTITUTE WEBSITE

BUILDING BRAINS VIDEO (4 MINUTES): ALBERTA FAMILY WELLNESS

CENTRES FOR DISEASE CONTROL AND PREVENTION (CDC)

READY TO GET PREGNANT?

PEDIATRICIAN NADINE BURKE HARRIS TED TALK (15 MINUTES)

How do I take an ACE Score in the Clinic?

Introduce the ACE Score and why it matters

- Give the patient the questionnaire on paper or iPad and set the agenda:
 - "At today's visit we will review your prenatal check up, review the ACE questionnaire that you have completed and answer any questions you have."
 - "We are asking all of our patients these questions as they can be important pieces of the the overall puzzle that is your health."
 - "Your emotional health is as important as your physical health. Some patients with a high ACE score may be at a higher risk of experiencing post-partum depression or threatened pre-term birth, so we are asking everyone these questions."

How do I take an ACE Score in the Clinic?

<u>Respond</u> to the ACE Score Using a Trauma-Informed Care

Perspective

- Look for strengths, coping strategies, resiliency
- "I see that you have an ACE score of X. You have been through some tough stuff and I am very sorry that happened to you as a child. How has this impacted you?
- "What is your understanding of an ACE score?"
- "How are you currently coping?" "How did you cope with those challenges as a child?"
- "What are your current supports?"
- "Have you discussed this history with your family physician?"

How do I take an ACE Score in the Clinic?

Manage the ACE Score Using a Trauma-Informed Care Perspective

- Most patients just want skills (coping, emotional regulation, interpersonal skills)
- Be optimistic a high ACE score is a risk factor, not deterministic
 - "Your brain and immune system were busy navigating a challenging environment when you were growing up so we know that you have a lot of resiliency; there may be some additional alternative strategies that might be helpful to also learn now."
- Highlight resources
- Manage your time: RE-BOOK if necessary, refer if needed
- Ask patient for consent to share information with other health care practitioners

Results of Survey of clinicians' perspective (n=32):

"I take a childhood trauma history with my pre-natal patients:"







Results of Survey of clinicians' perspective (n=32):



Phase II Patient Questionnaire Results

Thankful to be asked 20 How did discussing ACEs make you feel? Indifferent Surprised Uncomfortable or worried Understood and cared for 32 0 5 10 15 20 25 30 35

Patient Experience to ACE History Taking n=50

Comments from Patients on Anonymous Survey

"I spent time thinking of ways to help myself mentally and provide more happy experiences."

"It made me think about how I wish to parent my child."

"I liked the fact that I could take this home and discuss this with my partner."

"I was thankful I haven't experienced any of these and appreciative of a system that asks regardless."

At our 3 month evaluation of Phase II: Clinic staff and physicians reported

<u>little</u> to <u>**no impact**</u> on clinic flow.

Phase II: Expansion

- o Take Home Messages:
 - ACE questionnaire is a tool
 - The intervention IS a trauma-informed care response
 - Making it ROUTINE increases acceptability to patients and physicians
 - Little to no impact on clinic flow
 - Patient Responses



Phase III: Expansion

- Next Steps:
 - Scope and Scale up across our CFPCN
- Challenges:
 - Using the tool and resources in other languages
 - Streamlining resources and bridging gaps, coordinating care
 - More inclusive tool
 - Advocacy for improving the culture in medicine, health policy



OPTION 1: SECTION C

	Not at All	A	Some -what	Quite a Bit	ALot
1. I have people I look up to	1	2	3	4	5
2. I cooperate with people around me	1	2	3	4	5
3. Getting an education is important to me	1	2	3	4	5
4. I know how to behave in different social situations	1	2	3	4	5
5. My parent(s)/caregiver(s) watch me closely	1	2	3	4	5
6. My parent(s)/caregiver(s) know a lot about me	1	2	3	4	5
7. If I am hungry, there is enough to eat	1	2	3	4	5
8. I try to finish what I start	1	2	3	4	5
9. Spiritual beliefs are a source of strength for me	1	2	3	4	5
10. I am proud of my ethnic background	1	2	3	4	5
11. People think that I am fun to be with	1	2	3	4	5
12. I talk to my family/caregiver(s) about how I feel	1	2	3	4	5
13. I am able to solve problems without harming myself or others (for example by using drugs and/or being violent)	1	2	3	4	5
14. I feel supported by my friends	1	2	3	4	5
15. I know where to go in my community to get help	1	2	3	4	5
16. I feel I belong at my school	1	2	3	4	5
17. My family stands by me during difficult times	1	2	3	4	5
18. My friends stand by me during difficult times	1	2	3	4	5
19. I am treated fairly in my community	1	2	3	4	5
20. I have opportunities to show others that I am becoming an adult and can act responsibly	1	2	з	4	5
21. I am aware of my own strengths	1	2	3	4	5
22. I participate in organized religious activities	1	2	3	4	5
23. I think it is important to serve my community	1	2	3	4	5
24. I feel safe when I am with my family/caregiver(s)	1	2	3	4	5
25. I have opportunities to develop skills that will be useful later in life (like job skills and skills to care for others)	1	2	3	4	5
26. I enjoy my family's/caregiver's cultural and family traditions	1	2	3	4	5
27. I enjoy my community's traditions	1	2	3	4	5
28. I am proud to be a citizen of (insert country)	1	2	3	4	5

To what extent do the sentences below describe you? Circle one answer for each statement.

 Ungar, M., and Liebenberg, L. (2011). Assessing resilience across cultures using mixed-methods: Construction of the Child and Youth Resilience Measure-28. Journal of Mixed Methods Research, 5(2), 126-149.

2. Lie benberg, L., Ungar, M., and Van de Vijver, F. R. R. (2012). Validation of the Child and Youth Resilience Measure-28 (CYRM-28)

Among Canadian Youth with Complex Needs. Research on Social Work Practice, 22(2), 219-226.

Questions & Interactive Discussion



