

THE SCIENCE OF EARLY CHILD DEVELOPMENT & ATTACHMENT: Implications for Community Health Workers



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Approval Statement

This continuing education activity was approved by the Ohio Nurses Association, an Ohio Board of Nursing approver. (OBN-001-91)

No one with the ability to control content of this activity has a relevant financial relationship with an ineligible company.

Criteria for Awarding Contact Hours:

Learners must be present for the full duration of the training event.

This training has been created in collaboration with:

- Cathy Hergenrother, Mahoning Valley Pathways HUB Director
- Alexandra Carter, Cuyahoga County Pathways HUB Coordinator
- Shelby Hazelett, BSN/ RN, home visiting nurse through Metrohealth Nurse Family Partnership

what do you hope to learn today?



Learning Goals

By the end of this training, you will be able to state at least one strategy you can utilize in your work with families with young children to promote healthy socio-emotional development.

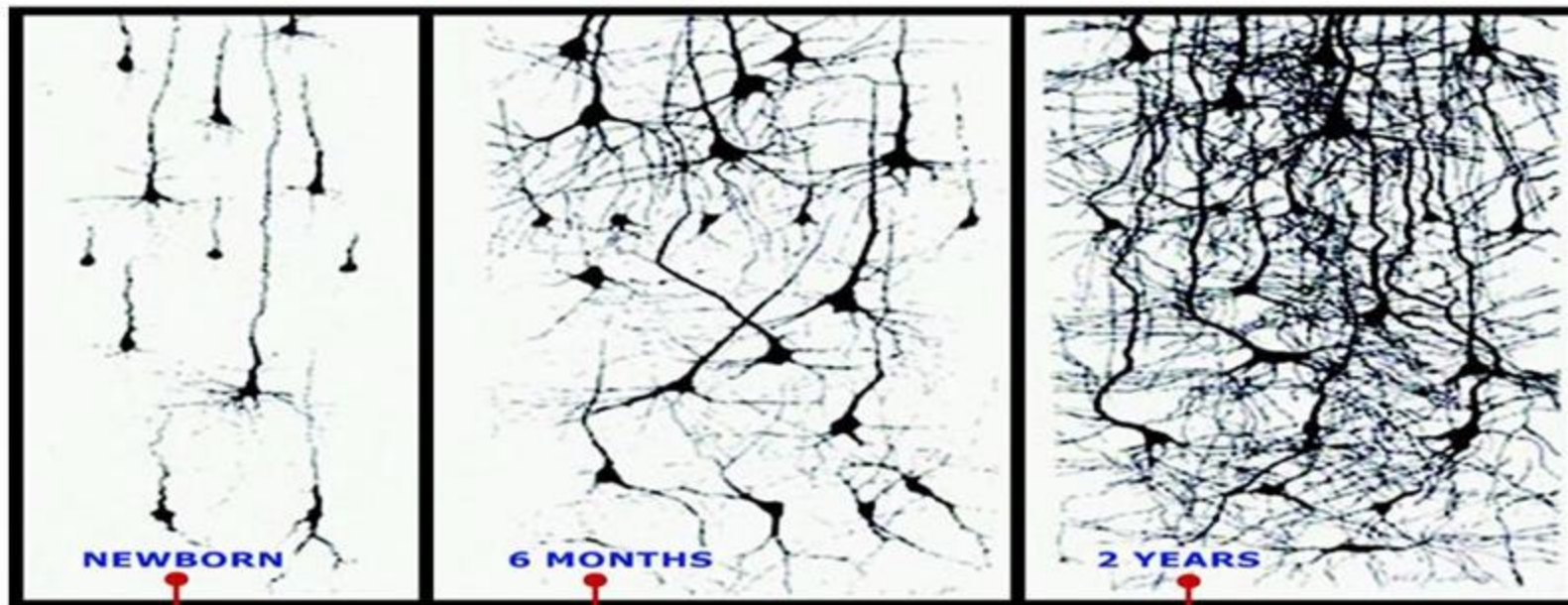
Topics we'll cover:

- **The Science of Early Development**
 - Early brain development
 - Impact of trauma and adversity on young children
 - Role of Buffering Relationships: Infant/toddler-parent attachment
- **Using the Science to Inform CHW Practice**
 - Implications for general policy and practice
 - Applying this information to your role as CHWs
- **Supportive Resources**
 - Early childhood mental health services
 - resources you can give to patients/ families
 - taking care of yourself - preventing secondary traumatic stress



BRAIN DEVELOPMENT DURING INFANCY AND TODDLERHOOD

700 700 NEW NEURAL CONNECTIONS PER SECOND



- Massive neural connections every second
- Early experiences affect brain architecture
- “Plasticity” of the brain is greatest early in life

BRAIN DEVELOPMENT DURING INFANCY AND TODDLERHOOD

The human brain, the command center of the entire body, is the only organ not fully developed at birth.

The early years are the best opportunity for a child's brain to develop the connections they need to be healthy, capable, successful adults.

90% of a Child's Brain Develops By Age 5



EARLY EXPERIENCES BUILD BRAIN ARCHITECTURE



**BRAIN
BUILDERS**



Early Brain Development



Two important concepts:

1. Just because a particular neural circuit forms does not mean it will survive. Neural circuits that do survive are those that continue to receive stimulation.
1. The neural circuitry that underlies our ability to think, reason, and understand emotion is not hardwired. Circuits are malleable and formation/modification is dependent to a large extent on environmental stimulation. (Plasticity)

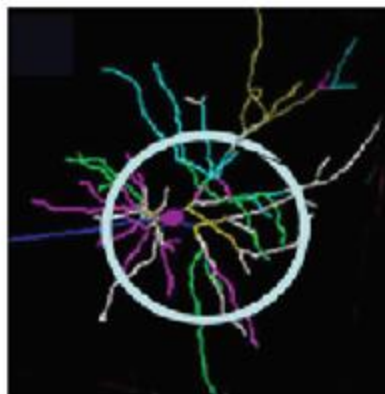
TRAUMA DURING INFANCY/ TODDLERHOOD



Center on the Developing Child
HARVARD UNIVERSITY

Persistent Stress Changes Brain Architecture

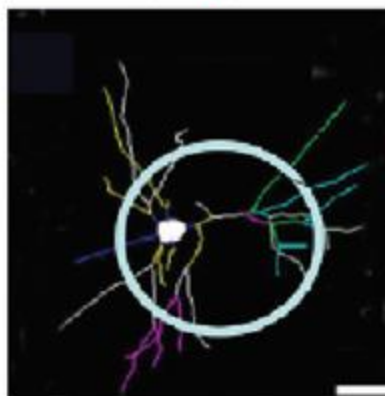
Normal



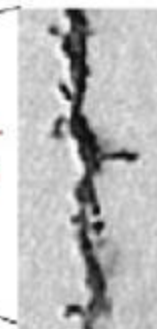
Typical neuron—
many connections



Toxic
stress



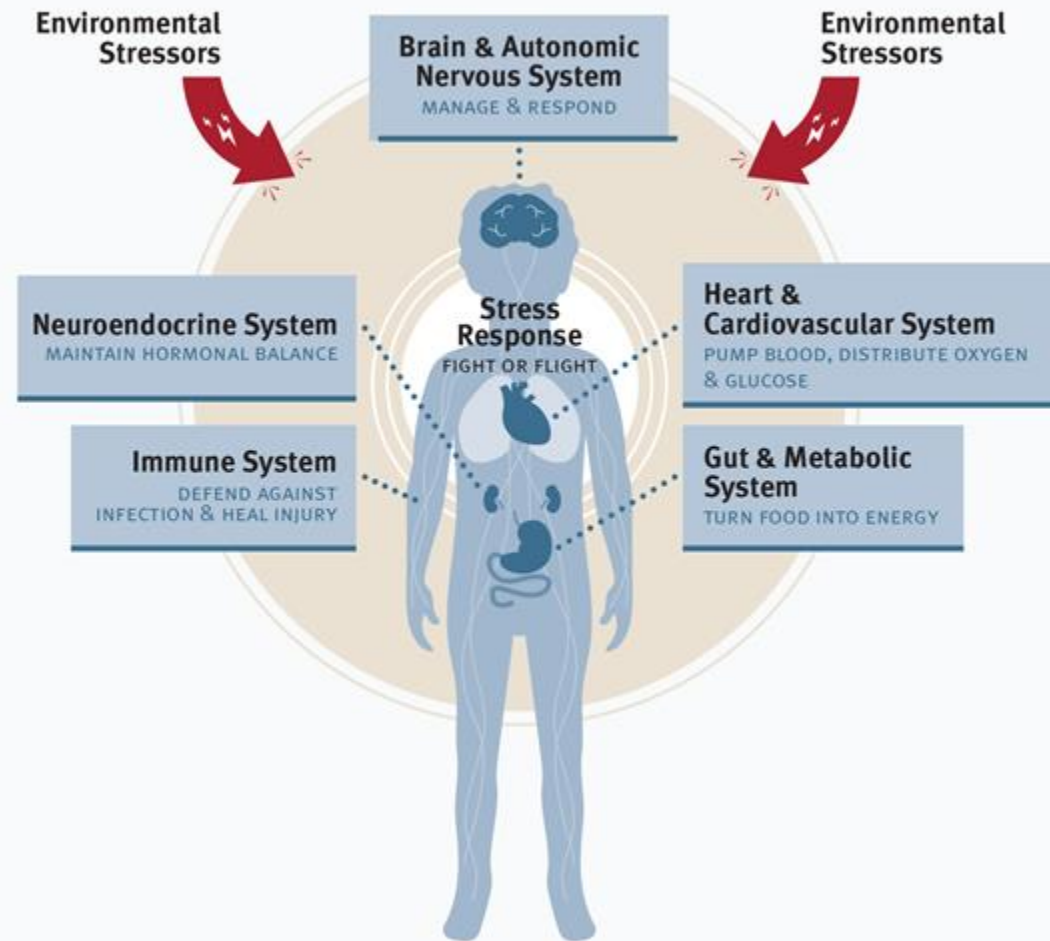
Damaged neuron—
fewer connections



Prefrontal Cortex and
Hippocampus

Sources: Radley et al. (2004)
Bock et al. (2005)

EARLY LIFE STRESS IMPACTS MULTIPLE BIOLOGICAL SYSTEMS



WHAT IS 'TOXIC STRESS'?

- When trauma/stress/adversity is unrelenting, these systems are chronically activated, leading to:
 - Flooding of stress hormones and chemicals
 - 'wear and tear' on body organs and systems
 - Increased inflammatory response
 - Changes in gene expression
 - Accelerated biological 'aging'

**“TOXIC STRESS DERAILS HEALTHY DEVELOPMENT”
VIDEO BY CENTER ON THE DEVELOPING
CHILD AT HARVARD UNIVERSITY**



STRESS & CHILDREN

<u>STRESS</u>	Positive	Tolerable	Toxic
Duration & Severity	Brief Mild/Moderate	Sustained Moderate/Severe	Sustained Severe
Social- Emotional Buffering	Sufficient	Sufficient	Insufficient
Effect on Stress Response System	Return to Baseline	Return to Baseline	Changes to Baseline

(American Academy of Pediatrics 2013)

ADVERSE CHILDHOOD EXPERIENCES

ABUSE



Physical



Emotional



Sexual

NEGLECT



Physical



Emotional

HOUSEHOLD DYSFUNCTION



Mental Illness



Divorce



Maternal
violence



Substance
Abuse



Incarcerated
Relative

ACES IN OHIO

- 61% of Ohio Adults report exposure to ACEs

Health Policy Institute of Ohio

Figure 3. Prevalence of ACEs, by number of ACEs, Ohio, 2015

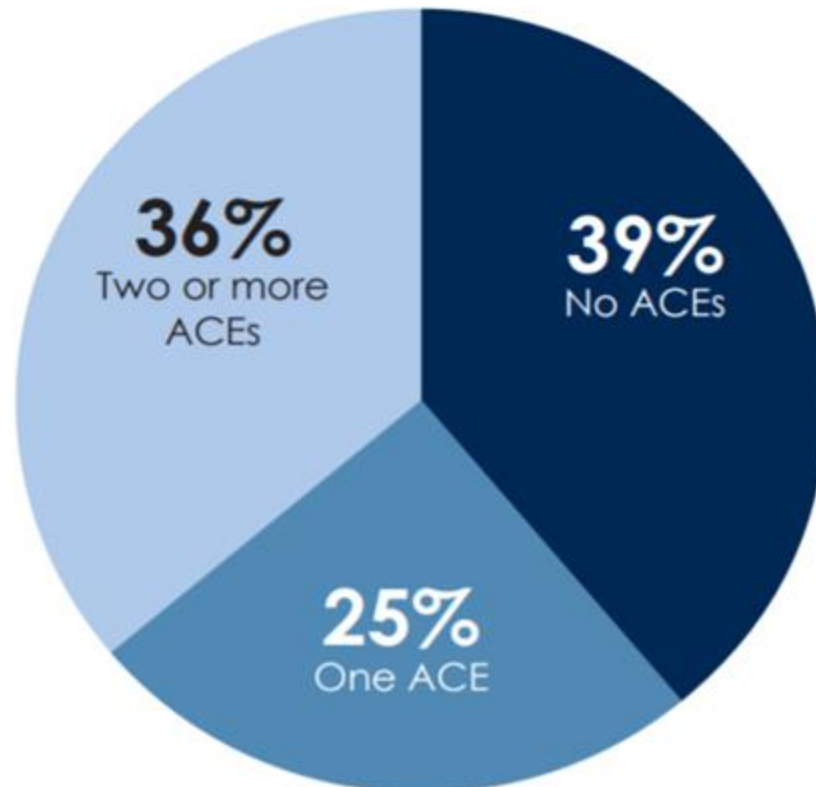


Figure 4. Prevalence of specific ACEs among adults who report at least one ACE, by type, Ohio, 2015

Abuse

Emotional abuse	57%
Physical abuse	26%
Sexual abuse	18%

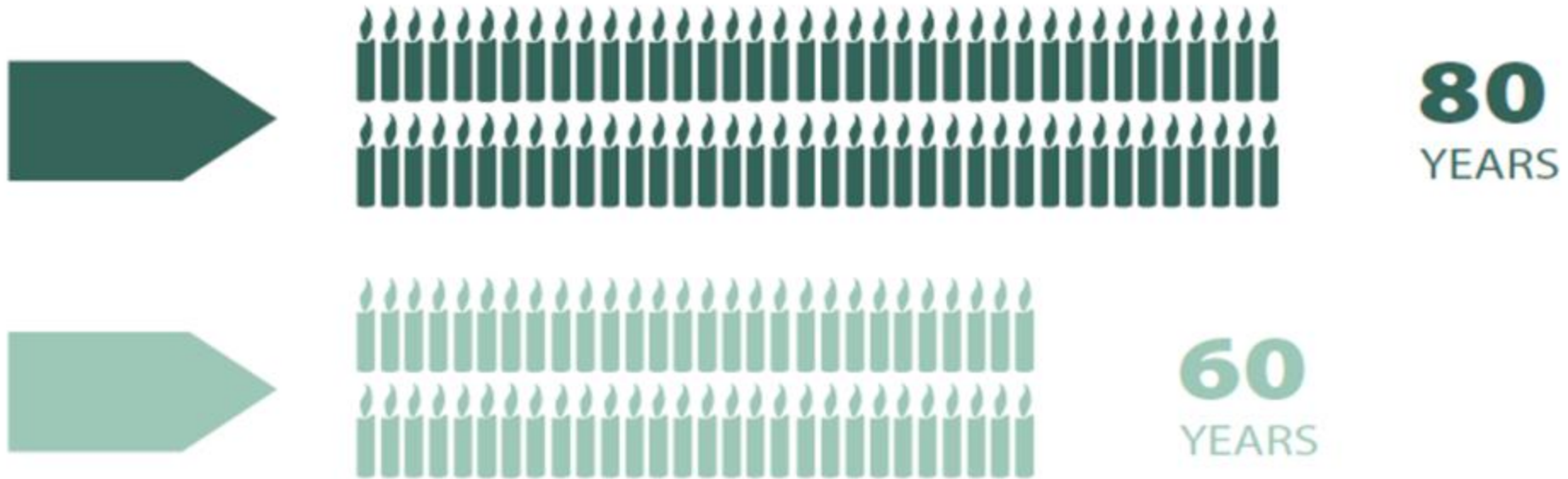
Household problems

Substance abuse by a household member	41%
Divorce/separation of parents	36%
Domestic violence	26%
Mental illness of a household member	25%
Incarcerated household member	14%

NO SURPRISE THAT...

LIFE EXPECTANCY

People with six or more ACEs died nearly 20 years earlier on average than those without ACEs.



How a Caregiver's Trauma Can Impact a Child's Development

EARLY DEVELOPMENT

Caregiver With Traumatic Experience

Mother releases cortisol

Baby absorbs cortisol through placenta

Can impact baby's:

- HPA axis
- Central nervous system
- Limbic system
- Autonomic nervous system



Caregiver struggles to regulate

Attachment relationship between caregiver and child may be strained

Can impact child's:

- Development of a core sense of self
- Ability to integrate experiences
- Epigenetic expressions

ADULTHOOD

A Person Who Has Had a Caregiver With *Untreated* Trauma May:

•Be more prone to PTSD after trauma

•Struggle to repair after conflict

•Struggle with relationships



•Unintentionally bring out negative behaviors in others

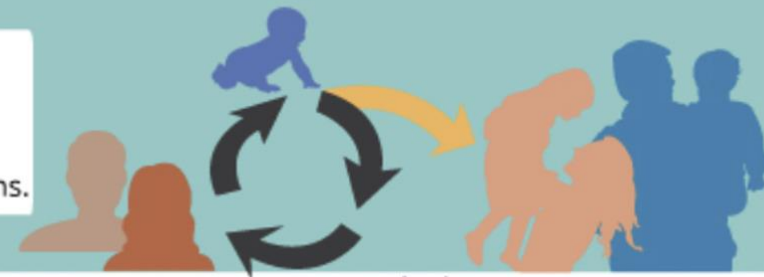
•Be emotionally detached

•Be more prone to dissociate

It's important to think not only about how this information applies to work you may do with young children— but also how early childhood trauma might be showing up/ manifesting in parents and adults as well!

BREAKING THE CYCLE OF TRAUMA

This can become a cycle, impacting future generations.



The good news is that healing trauma can break this loop. Seek help from a licensed health or mental health practitioner.

Breathing break!

THE GOOD NEWS



RELATIONSHIPS MATTER

(FOR BETTER OR FOR WORSE)

One of the strongest environmental influences on early brain development is the quality of relationship between caregivers and child



SAFE, SUPPORTIVE,
NURTURING
RELATIONSHIPS
+
INFANCY/
TODDLERHOOD



Relationships highly impact early brain development!

How?

- Serve and return interactions
- Attachment formation
- Circle of security

The most important influences on a child's development are their relationships with the adults in their life.

Brains are built through social interactions!



Serve and Return Interactions

Serve and Return interactions shape brain architecture.

When an infant or young child babbles, gestures, or cries, and an adult responds appropriately with eye contact, words, or a hug

→ neural connections are built and strengthened in the child's brain that support the development of communication and social skills.

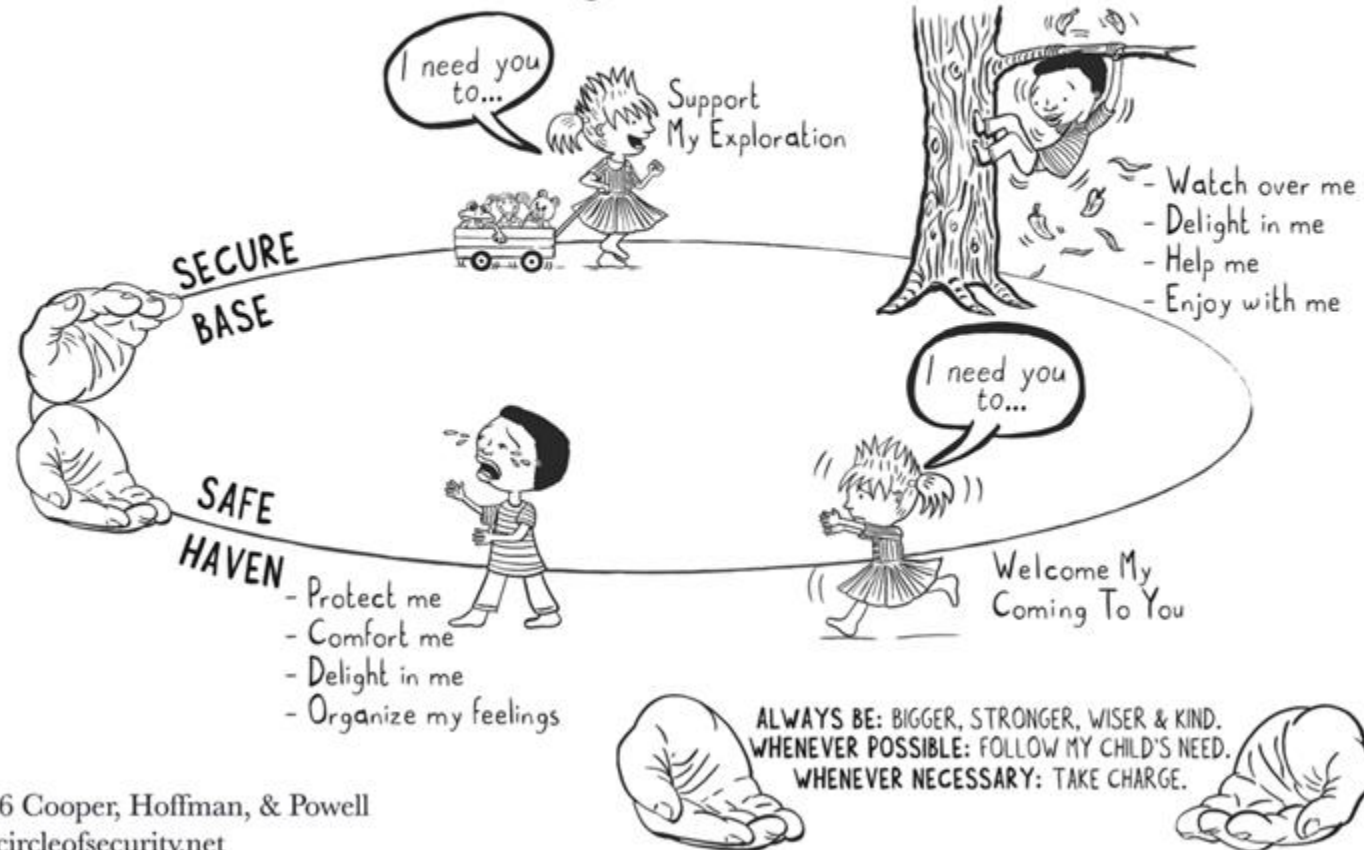
When caregivers are sensitive and responsive to a young child's signals and needs, they provide an environment rich in serve and return experiences.



ATTACHMENT & THE “CIRCLE OF SECURITY”

Circle of Security[®]

Parent Attending To The Child's Needs



SECURE ATTACHMENT

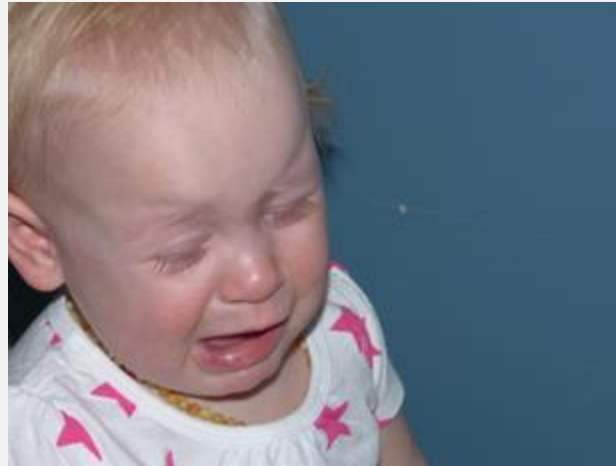
- **Secure attachment** = the child can trust the parent to consistently be there at times of stress to comfort, support, and protect them; this trust is **built over time based on history of interactions**
- **Young children with a secure attachment tend to:**
 - Cry less and can be soothed more easily
 - Are more friendly and cooperative
 - Learn better/more easily through play/exploration
 - Feel happier and less sad or scared
 - Make friends more easily
 - Are more ready for school



INSECURE ATTACHMENT



Avoidant



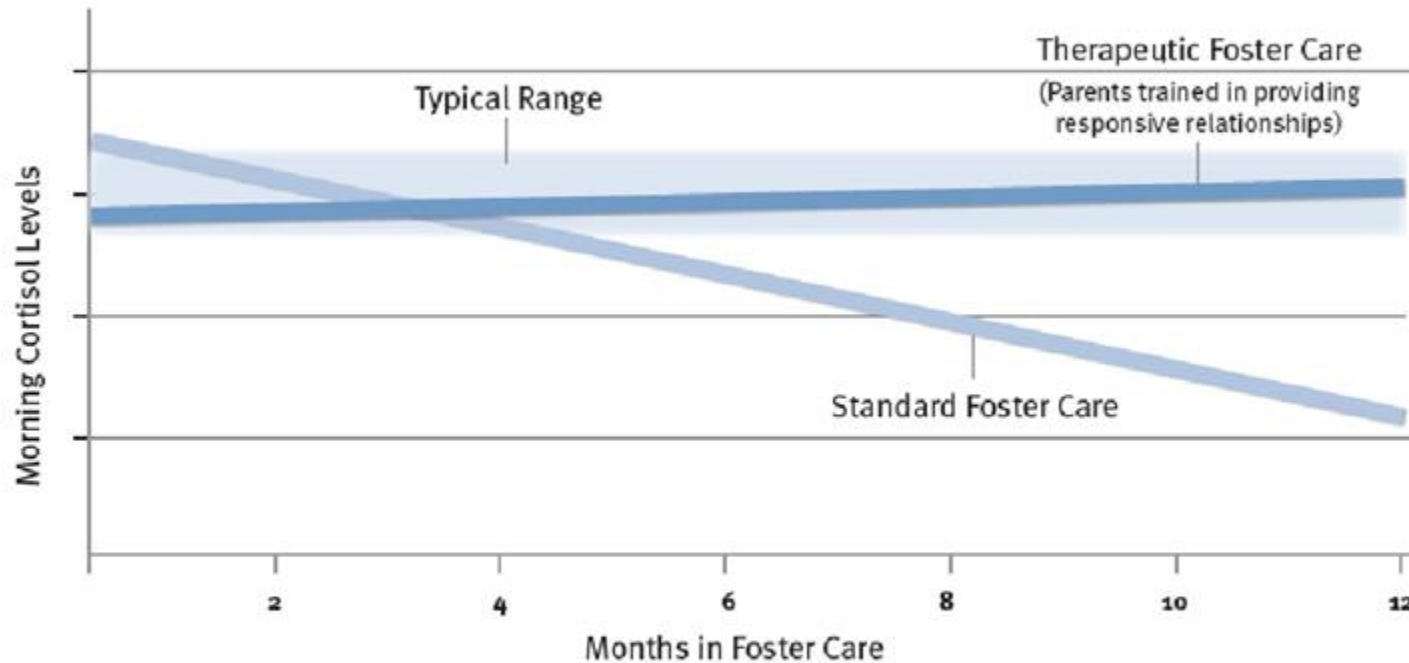
Ambivalent-Resistant



Disorganized

BUFFERING RELATIONSHIPS

Supportive Relationships Restore Disrupted Stress Response



Children in the child welfare system, many suffering from serious neglect, can see dramatic improvements in stress response with the provision of supportive relationships. Without such relationships, children in this study who received standard foster care showed suppressed levels of the stress hormone cortisol, which worsened the longer they were in foster care. Foster parents trained to provide responsive relationships through the Multidimensional Treatment Foster Care for Preschoolers intervention (see sidebar on page 12) were able to restore foster children's stress hormones to typical levels, as measured in a control group of children from the same community who were not in foster care.

Source: Fisher, et al. (2007)⁹⁶

MYTHS & FACTS

Myths	Facts (as we know them now)
Age doesn't matter. Infants and toddlers won't remember events so there is less concern for exposure than in older children.	"The body keeps the score"-Bessel van der Kolk Early experiences are baked into brain architecture
Insecure or problematic attachment quality means that a child's parent is incapable of care, or worse, has been maltreating	Many things influence attachment quality and attachment quality can evolve over time; insecure attachment is a risk factor but not deterministic (and is malleable)
Coddling your baby/ spoiling your baby by holding them too much, soothing their crying all the time	Babies need co-regulation and soothing from adults for their nervous systems to develop in a healthy way

Cultural Humility



- We recognize that our culture and identities shape the way we interact with the world
- We aim to understand how the culture and identities of others shape the way our clients interact with the world
- Cultural humility also recognizes that people have different experiences in the world related to their culture and identities
- A stance of cultural humility can help us ensure we are providing high quality and equitable services to our families

Culture Influences Development

Culture is mediated through the parenting relationship and influences infant/young child development.



Cultural Humility and Parenting

from Dr. Sufna John



Embracing cultural humility when we think about parenting means:

- We recognize there are multiple “good” ways to parent
- We understand we are not the experts on the best way a given family can approach parenting
- We understand that the perinatal period – pregnancy through the first year of an infant’s life – is an especially powerful and vulnerable time for caregivers and babies
- Our goal is to help families parent in a way that is both congruent with their values and safe

Now.... to hear from you!

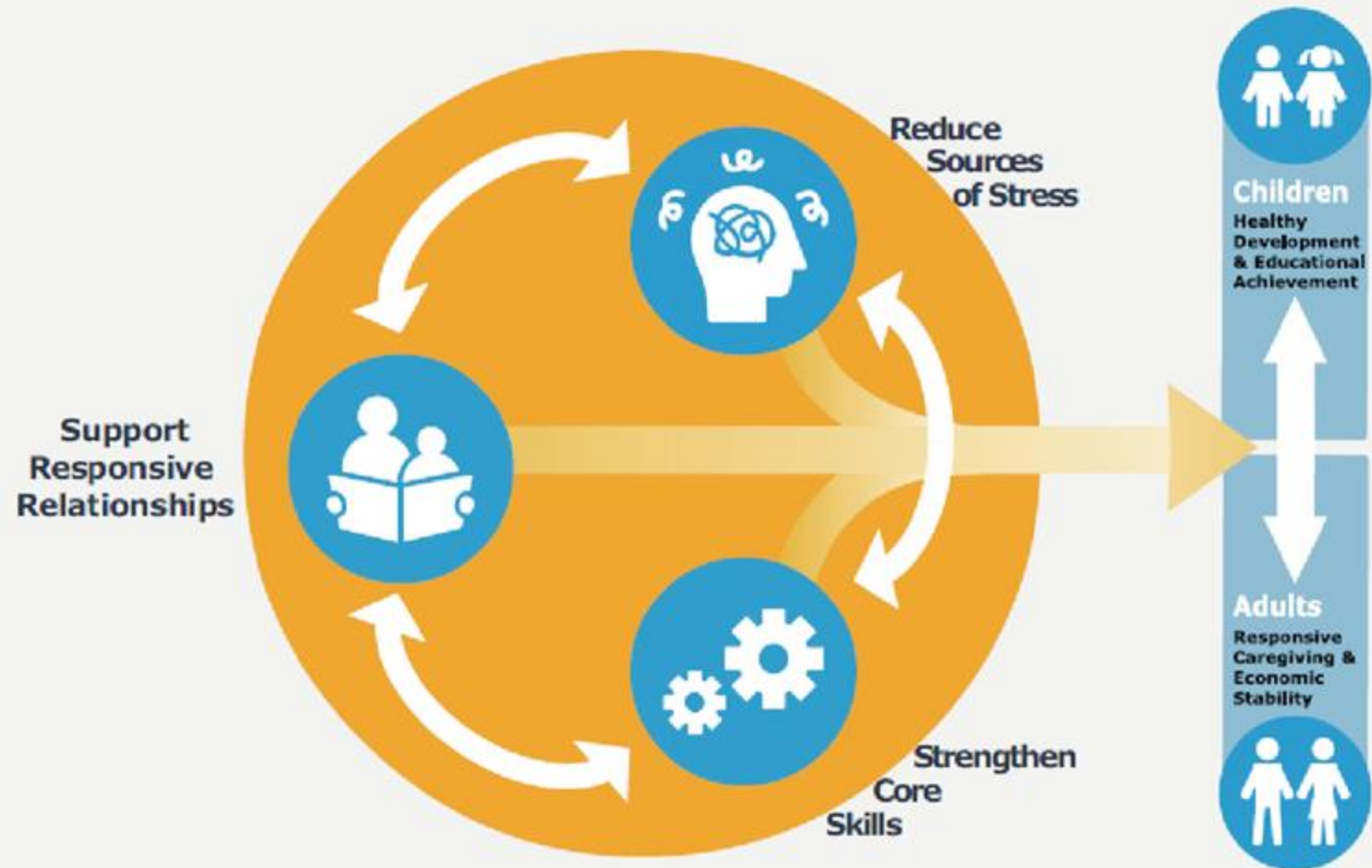
How do you see this come up in your work?

Does this resonate? Does it not?

What thoughts/ reactions are bubbling up for you?



THE SCIENCE OF EARLY DEVELOPMENT SHOULD INFORM POLICY & PRACTICE



INVEST EARLY!

Why do we want CHWs to know?



It is sometimes hard for our systems to identify young children (0-5yrs– before school age) that may be in need of support. Unless they are in daycare, these children might not be interfacing with any of our systems, besides (hopefully) healthcare

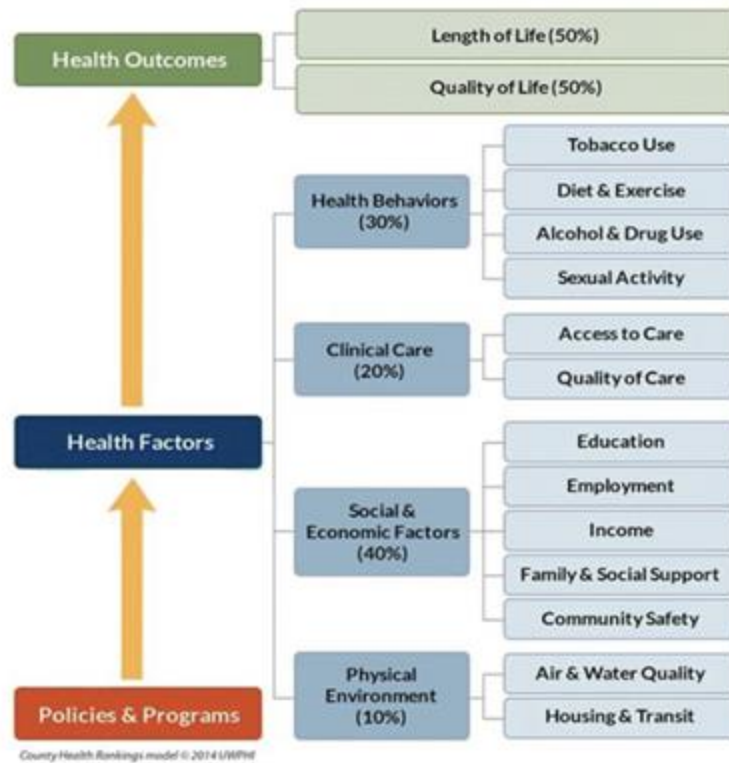
we need all hands on deck! all professionals working with families/ parents of young kids, to be aware of signs of healthy/ unhealthy early development– as experiences during this age are so predictive for long term health outcomes.

Evidence demonstrates that the health system is the best way to reach children in their first 3 years of life, a critical stage of brain development.

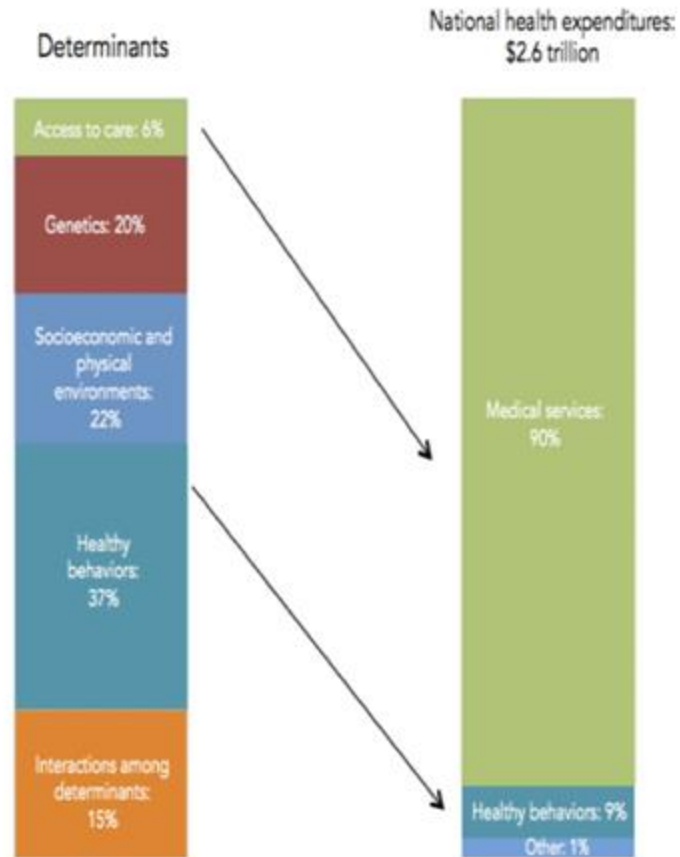
CHWs are particularly qualified to help provide culturally responsive and trusting care and support for families who might have concerns or need support for their future child/ young child

Factors Influencing Health and U.S. Health Care Expenditures

Outcomes and Determinants



Determinants and Spending



Source on Outcomes and Determinants. County Health Rankings Model. University of Wisconsin.

what do you feel you might be able to
bring back into your work?

Resources

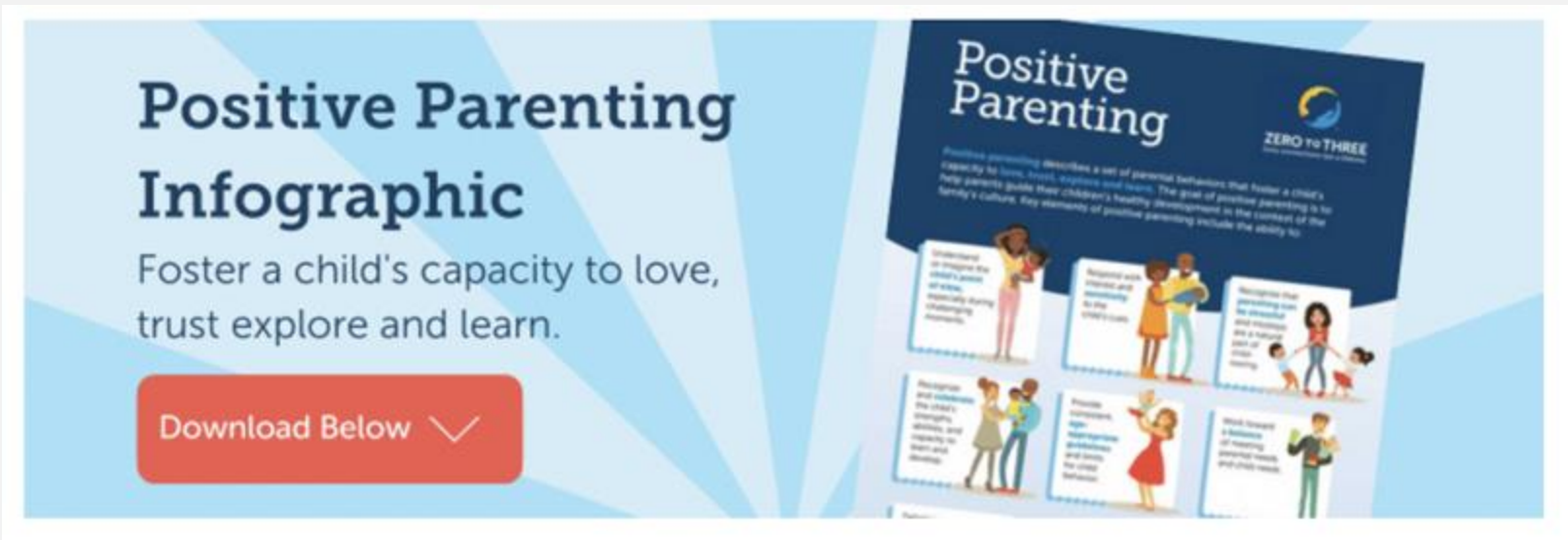
Sparkler App

<https://playsparkler.org>




Resources

<https://www.zerotothree.org/resources/positive-parenting/>



Positive Parenting Infographic

Foster a child's capacity to love, trust explore and learn.

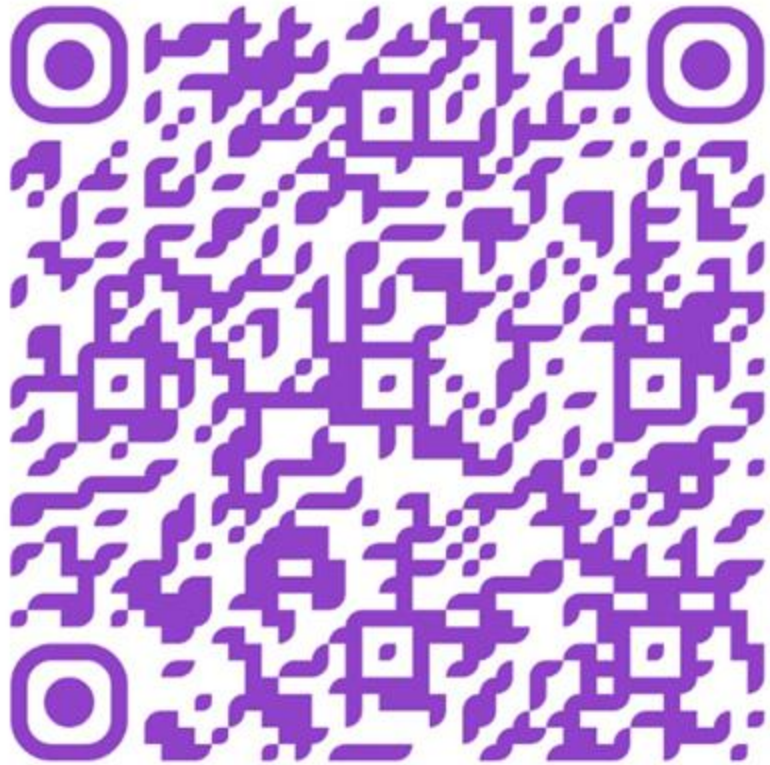
Download Below 

The infographic features a central title 'Positive Parenting' with the ZERO TO THREE logo. Below the title is a definition: 'Positive parenting describes a set of parental behaviors that foster a child's capacity to love, trust, explore and learn. The goal of positive parenting is to help parents guide their children's healthy development in the context of the family's culture. Key elements of positive parenting include the ability to:'. Six numbered boxes follow, each with an illustration and a key element: 1. Understand an infant's or toddler's cues and respond accordingly during interactions. 2. Respond with warmth and sensitivity to the child's cues. 3. Recognize that discipline is not necessary for all children and is not a form of punishment. 4. Recognize that children are not obedient and that children's behavior is not a reflection of their character. 5. Provide consistent, age-appropriate boundaries and limits for the child. 6. Speak calmly in a matter-of-fact way, avoiding harsh or punitive language.



Resources

[Brainstem-Soothers.pdf](#)



One of the most helpful ways to help children reacting from their 'survival brain' move into their more regulated 'thinking brain', is to enrich their daily routine with patterned, repetitive, rhythmic brainstem soothing activity.



CONSIDER INFANT/EARLY CHILDHOOD MENTAL HEALTH SERVICES

- **Infant and early childhood mental health (IECMH)** is “the developing capacity of the child from birth to 5 years old to form close and secure adult and peer relationships; experience, manage and express a full range of emotions; and explore the environment and learn-all within the context of family, culture, and community.” (Zero to Three, 2018)

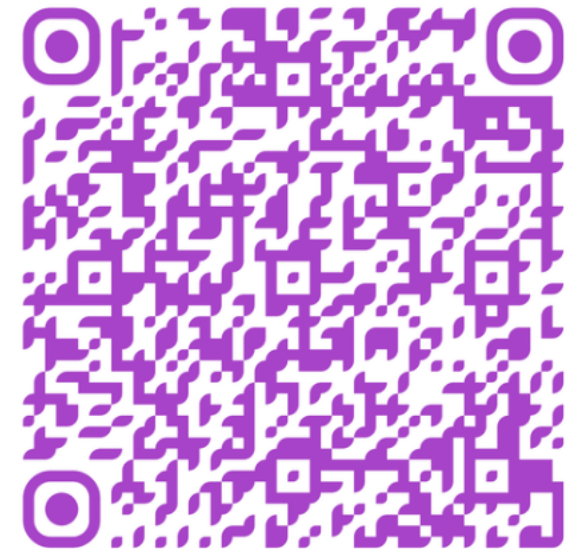


CONSIDER INFANT/EARLY CHILDHOOD MENTAL HEALTH SERVICES

- **IECMH services are designed to:**

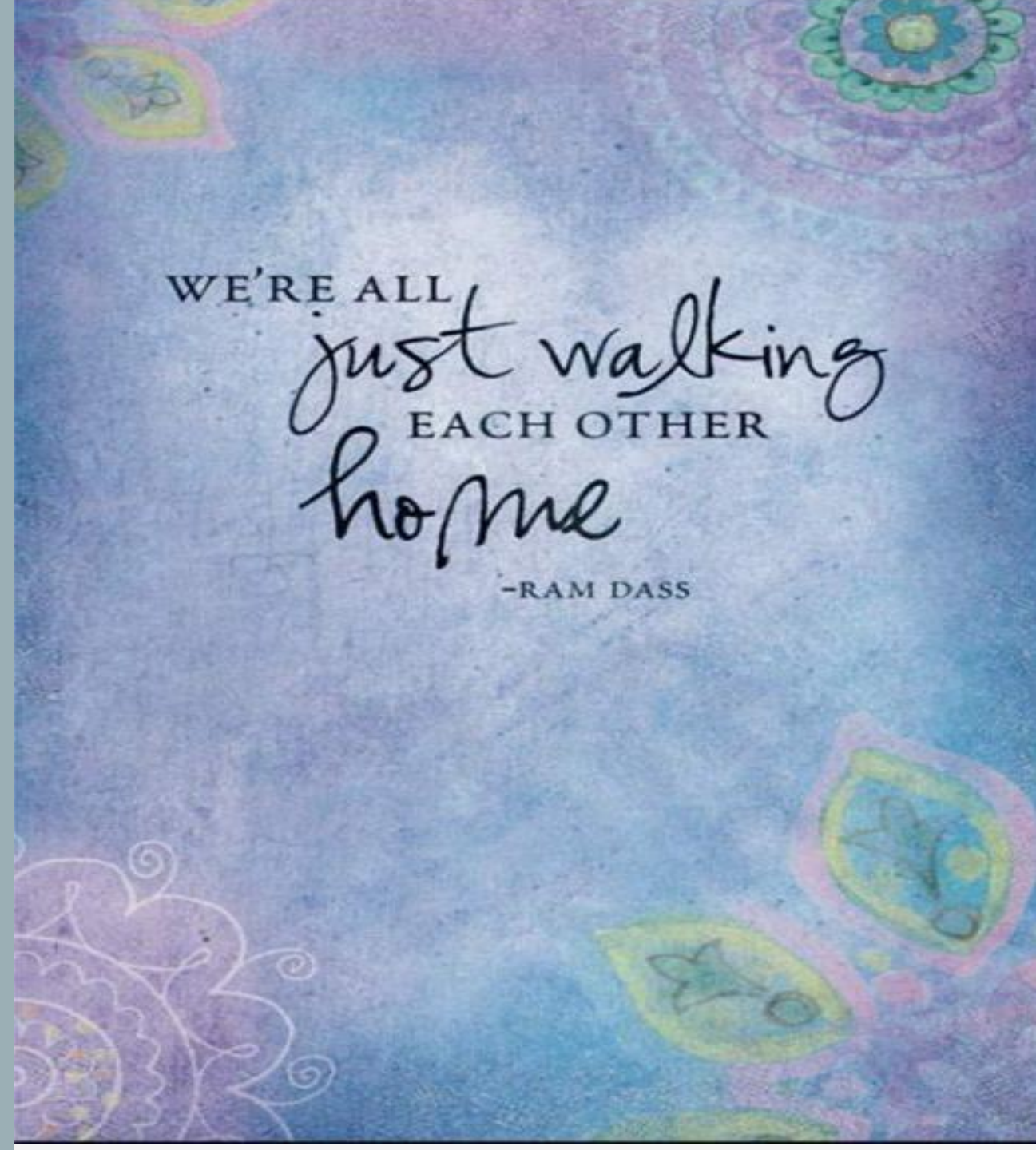
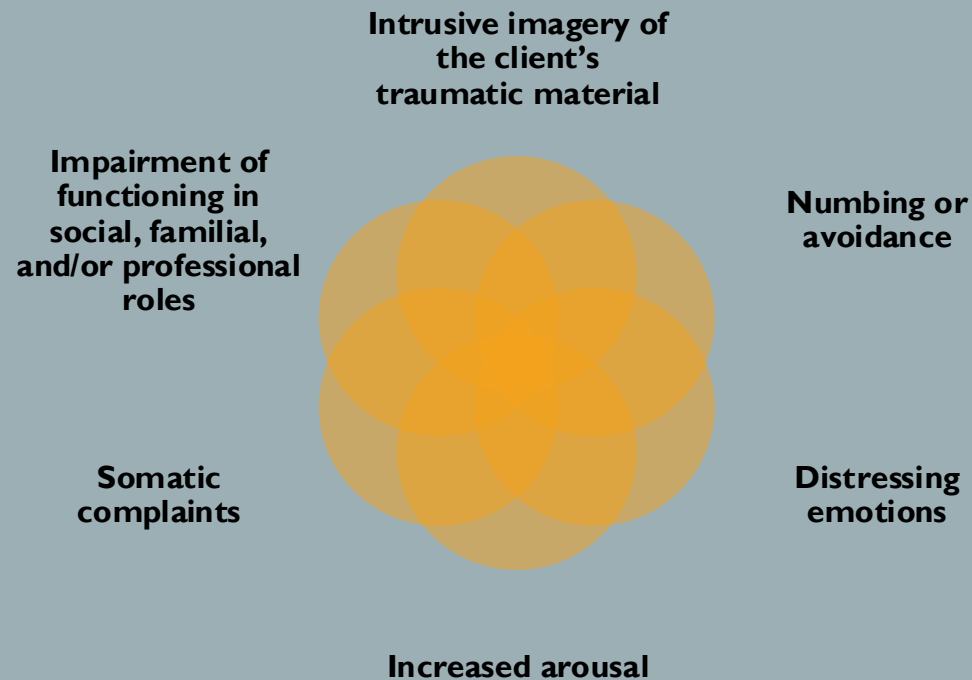
- Strengthen the social, emotional, cognitive and physical well-being of infants and young children within secure and stable caregiving relationships
- Help young children and families together, to identify their unique capacities and to support appropriate infant-parent interactions and responses
- Build security of attachment and stability of infant/young child and family relationships as primary goals of services.

How to refer ----->



THE COST OF CARING: Secondary Traumatic Stress

The impact of caring for those
who have experienced trauma



WHAT CAN WE DO?



DEVELOPING A SELF CARE PLAN

KEEP YOUR BUCKET FULL



**QUESTIONS?
DISCUSSIONS?**



THANK YOU!

Contact for more information:

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References

Harvard University Center on the Developing Child

Alberta Family Wellness

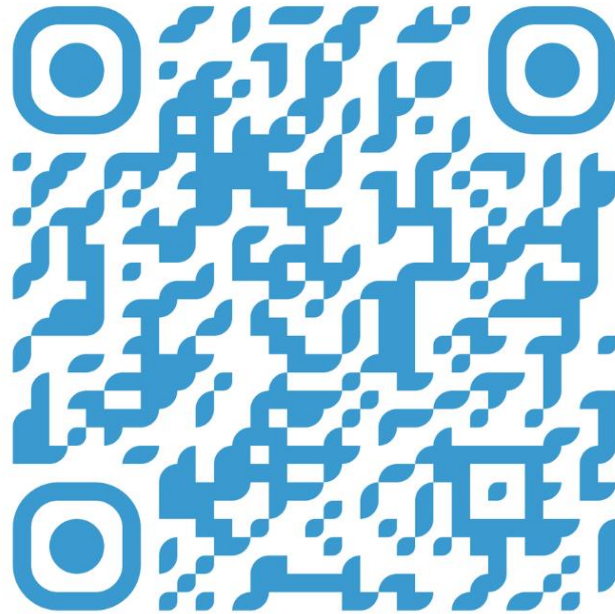
Health Policy Institute of Ohio

Circle of Security

Zero To Three

Merrill Palmer Skillman Institute at Wayne State University

**Please fill out this survey
to give us some feedback on this training!**



The Science of Early Child
Development & Attachment - CE
Registration

