Traumatic Experiences of Children Achieving Permanency

1. Introduction and Objectives

1.1 Introduction

Welcome back to the National Adoption Competency Mental Health Training for Mental Health Professionals. This module is: Addressing the Impact of Trauma on Child Development and Mental Health. This lesson is: Traumatic Experiences of Children Achieving Permanency Through Adoption and Guardianship.

1.2 Section 1: Lesson Objectives

At the end of this lesson you will be able to:

- Identify and describe types of trauma and implications for therapeutic intervention with each
- Describe the impact of trauma and early and ongoing adverse experiences on brain development, behavior, and identity formation

2. Types of Trauma

2.1 Types of Trauma

Let's start with a discussion about the types of trauma.

2.2 Trauma and Loss

As described in earlier lessons, trauma and loss are normal parts of life. Most children are fortunate enough to have caring environments that help mitigate the impact of the inevitable losses or adversities that all children are likely to encounter.

However, children and youth with histories of foster and institutional care who have permanent families through adoption or guardianship are more likely to have experienced severe trauma without the benefit of the mitigating supports.

2.3 Trauma at Any Age

Trauma can occur at any age. Early childhood trauma generally refers to the traumatic experiences that occur to children, birth through 6 years. Most of the traumas that children in foster care experience occur early in their lives, before they enter care.

Children and youth in foster and institutional care, however, may continue to be traumatized beyond early childhood as they experience multiple moves in foster care, disrupted adoptions, and other adverse events in their lives.

Traumatic stress occurs when children and adolescents are exposed to extremely adverse life events or situations that overwhelm their ability to cope, leading to physical, cognitive, emotional destabilization, and dysfunction in one or more areas of their lives.

For children and youth to heal, the impact of trauma on their health and well-being must be addressed.

2.4 Type 1 and Type 2 Trauma

Trauma may be classified as Type I or Type II. Click on each topic to learn more.

Type 1 Trauma: Type 1 trauma is single-incident trauma, such as trauma resulting from a natural disaster, an accident, or a medical procedure.

Type 2 Trauma: Type 2 trauma is intentional interpersonal trauma involving a fundamental betrayal of trust in a pattern of primary relationship - a parent or caregiver. It includes physical and sexual abuse. Children and youth with histories of foster care or institutional care prior to adoption or guardianship are particularly likely to have experienced one or more Type II Traumas.

2.5 Various Types of Trauma from Child Maltreatment

Many children and youth will have experienced both Type I and II Traumas, as well as other forms of trauma that are often overlooked or minimized, and which will be discussed later in this lesson.

Let's consider children's traumatic histories. Click on each tab to learn more. When you are finished with each topic click the continue button to move on to the next section.

2.6 Physical Abuse and Sexual Abuse

Click on each category to hear about physical and sexual abuse.

Physical Abuse: Physical abuse is the most recognizable form of abuse because the physical indications are often evident. It can be defined as, "an injury or a pattern of injuries to a child that is non-accidental."

Sexual Abuse: Child sexual abuse is sexual activity with a minor. Minors cannot consent to any form of sexual activity. Child sexual abuse does not need to involve physical contact between a perpetrator and a child. It may be exposing oneself to a minor or having sex in their presence.

2.7 Emotional Abuse and Neglect

Emotional abuse and neglect are often harder to identify, but are just as damaging to children and youth, and are believed to be the most prevalent forms of child maltreatment. Definitions of emotional abuse and neglect vary but all include persistent, harmful interactions with the child by the caregiver. Click on the buttons to hear examples for each.

Emotional abuse: Emotional abuse, or psychological abuse, is a pattern of behavior that negatively impacts a child's or youth's emotional development or sense of self-worth, such as persistent ridiculing or withholding love.

Neglect: Neglect is the failure of a parent or other caregiver to provide for a child's or youth's basic physical, educational, medical, and emotional needs. This neglect is often seen in families where caregivers are impaired by substances.

2.8 Case Example

The following case example illustrates both physical and emotional abuse:

Sammy was a toddler who had been late to walk and was not yet able to talk. His mother worked and lived with her boyfriend, Ed, who provided child care. Ed had little interest in Sammy and managed to find ways to entertain himself at Sammy's expense.

One afternoon, Ed sat outside on the steps of the back porch, held open the screen door and called to Sammy. Just as Sammy approached, Ed let the screen door close on him, knocking Sammy down. Sammy would cry and toddle away while Ed ridiculed and made fun of him. Moments later, the game would begin again.

Fortunately, the mail carrier witnessed what was going on and called child protective services. Sammy entered foster care after an investigation and when his mother was unable to provide a safety plan for him.

2.9 Understanding the Significance of Neglect

Neglect is often overlooked as a potent form of trauma for children and youth. While approximately three-fourths of children with substantiated maltreatment reports are indicated as experiencing neglect, many professionals assume this is less harmful than physical or sexual abuse.

Watch this video from the Center for the Developing Child at Harvard.

[Video Transcript]

[ON SCREEN] The Science of Neglect

JACK P SHONKOFF: Everyone, in a community, has a vested interested in everyone else's children because everyone else's children determine the next adult population that makes for a successful society.

[ON SCREEN] Jack P. Shonkoff, M.D. Center for the Developing Child at Harvard University

Built into our biology is the need to have responsive interactions with adults.

[ON SCREEN] Linda C. Mayes, M.D. Child Study Center Yale University School of Medicine

LINDA C MAYES: Neglect for children is when they don't get what the brain is expecting to get, what the child is expecting to get. What we are biologically prepared and waiting for, which is input from those around us.

DR SHONKOFF: It's this back-and-forth, serve-and-return interaction that literally shapes the architecture of the brain.

[ON SCREEN] Philip A. Fisher, Ph.D. Oregon Social Learning Center University of Oregon

PHILIP A FISHER: Serve-and-return begins when a child looks at something or observes something, makes an utterance, and that represents the serve. And the return is when the parent notices the child doing these things and responds to the child.

[ON SCREEN] Megan R. Gunnar, Ph.D.

MEGAN R GUNNAR: Under conditions where serve-and-return is bro-ken, you literally are pulling away the essential ingredient of the development of human brain architecture.

[ON SCREEN] "Still Face" Experiment, Ed Tronick, University of Massachusetts Boston

DR SHONKOFF: There was a really compelling series of experiments where they stared by videotaping the mother and the baby engaging in cooing and smiling. And then they asked the mother to basically put on a blank face and not respond at all.

When a baby is not attended to, that is a sign of danger to the baby, biologically. So the stress systems become activated.

DR MAYES: In a brain that is constantly bathed in stress hormones, not this up and down that comes with normal development, certain key synapses, the connections between nerves fail to form in critical regions of the brain.

DR GUNNAR: So neglect both fails to provide the stimulation that's needed to develop the basic architecture, and, when it's at a certain level, is one of the most potent activators of the stress biology of a young child. So you get a double whammy.

[ON SCREEN] The Spectrum of Neglect. Four Types of Unresponsive Care. Occasional Inattention. Chronic Under-Stimulation. Severe Neglect in a Family Context. Severe Neglect in an Institutional Setting.

DR SHONKOFF: Science points to four categories of this spectrum of neglect. The first category would be what's called Occasional Inattention, where children experience responsiveness most of the time but occasionally adults don't respond. There's no harm in that. And, in fact, there's probably some benefit.

[ON SCREEN] Nathan A. Fox, Ph.D. Child Development Laboratory University of Maryland College Park

NATHAN A FOX: A child can learn to self-soothe and explore the environment, and all of those opportunities build brain architecture.

DR SHONKOFF: The second category scientists would call Chronic Under-Stimulation is where, on a regular basis children have less interaction with the adults around them than is needed for healthy development.

DR FISHER: Those children typically, when provided with enriched learning opportunities and more typical levels of certain return, will show catch-up.

DR SHONKOFF: The third category is what science would call Severe Neglect in a family where not only are there prolonged periods of inattention and lack of responsiveness, but often also associated with not being fed enough, not being bathed enough, not having basic needs met.

[ON SCREEN] Brenda Jones-Harden, Ph.D. Institute for Child Study, Department of Human Development University of Maryland College Park

BRENDA JONES-HARDEN: Neglect is a huge problem in the U.S. Children are much more likely to be neglected than they are to experience any other kind of maltreatment.

DR FISHER: We see the child really being at risk for much more substantial kinds of deficits down the road that don't necessarily get easily fixed or ameliorated. This is where we really need to think about more complicated and often more intensive strategies to help undo those effects.

DR SHONKOFF: The fourth category, called Severe Neglect, generally found in institutional settings, is a result of children living in kind of warehouse-type situations in orphanages.

DR MAYES: And it doesn't have to even be as extreme as orphanages; it can be experiences that are, regretfully, occurring in many, many parts of our country.

DR JONES-HARDEN: Often, institutional care in this country is under the euphemistic name of transitional care or temporary care or assessment facilities.

DR FISHER: If you think about what institutional or residential care would look like for an infant, where there's somebody new coming onto the shift every eight hours, it really alters the development of the child's brain architecture and other aspects of the child's development.

[End of Video]

For more information on types of child maltreatment, see "*What Is Child Abuse and Neglect? Recognizing the Signs and Symptoms*" in the Resources tab.

2.10 Witnessing Domestic Violence

Research shows that even when children and youth are not direct targets of violence in the home, they can be harmed by witnessing its occurrence. The witnessing of domestic violence can be auditory, visual, or inferred, including cases in which the child or youth perceives the aftermath of violence, such as physical injuries to family members or damage to property.

Children and youth who witness domestic violence can suffer severe emotional and developmental difficulties that are like those of children and youth who are direct victims of abuse.

2.11 Separation Trauma

Another form of trauma common to children and youth adopted from and currently in foster care and institutional settings is traumatic separation.

Click each topic to learn more.

Definition: Traumatic separations are unexplainable, uncontrollable, and sudden moves for which individuals were not prepared. This may happen many times to some children. Traumatic separations lead to a pervasive sense of insecurity, strong fears of repeated loss, and feelings of vulnerability and powerlessness.

Continued Impact Over Time: Sometimes children who have been in their new family for many years still have fears of being kidnapped and taken away from their new family, or fear strangers or professionals. For example, a 4th grade boy who had been in his adoptive home for 5 years thought a school psychologist who came to his classroom to see him was a worker coming to remove him from his family. He bolted and ran away.

Steps for Clinicians and Parents: It is important for the clinician to recognize, assess, and address in treatment both the circumstances under which the separation occurred and the underlying cause of the separation. Adoptive parents and guardians must also be helped to understand how these experiences may be interfering with the child's ability to develop attachments. See *Children with Traumatic Separation* in the Resources tab for more information.

2.12 Childhood Traumatic Grief

Another type of trauma is Childhood Traumatic Grief.

Childhood Traumatic Grief is a condition that some children develop after the death of, or permanent separation from, a family member or other attachment figure.

Children with Childhood Traumatic Grief experience the cause of the death as terrifying, whether the death was sudden or unexpected, such as in cases of homicide, suicide, motor vehicle accident, natural disaster, war, terrorism, or due to natural causes, such as cancer or a heart attack.

Childhood Traumatic Grief is different from and can interfere with the normal bereavement process following the death of a loved one. Intrusive thoughts about the event and other trauma triggers make it difficult for the child to process and integrate the death in a way that does not overload the child's coping systems.

2.13 Child Traumatic Grief Case Example

Let's look at a brief case example of Childhood Traumatic Grief.

Lynn, age 6, spent the night with her maternal grandmother who lived down the street. The next morning, her grandmother walked her home.

When they entered the home, they found Lynn's mother in the kitchen. She had a gunshot wound to the head and a gun lay nearby, an apparent suicide. However, her face was severely beaten and Lynn's father was not home.

Lynn's grandmother took her to her house. That night, after Lynn finally fell asleep, her grandmother died of a heart attack while taking a bath.

Lynn was placed with distant paternal relatives who forbade her to have contact with her maternal relatives.

2.14 Multiple Losses

Lynn experienced trauma in the loss of both her mother, in a violent way, and her grandmother shortly thereafter. She was then placed with distant relatives and was completely separated from her mother's family. Lynn is faced with multiple losses that can result in Childhood Traumatic Grief.

2.15 Cumulative Trauma

Historical trauma is defined by Dr. Maria Yellow Horse Brave Heart as *"Cumulative emotional and psychological wounding across generations, including the lifespan, which emanates from massive group trauma."*

Click on each image to learn more.

1. Historic trauma typically includes physically and psychologically harmful and distressing events or experiences that impact people and can be accompanied by extreme maltreatment. Examples include war, famine, pandemics, violence, and genocide.

2. When these conditions persist over generations, the patterns associated with trauma can impact the genetic markers for trauma responses turning on genes that support hyper-alert states or numb emotional pain.

3. Historic trauma is also passed from generation to generation through learned response patterns. Children and youth feel the trauma responses of parents and learn to respond to the same triggers as the parent.

2.16 Case Example

Take the example of Awan:

Awan is an American Indian whose mother experienced boarding schools and was beaten for speaking her language and who lived with threats against her family.

Awan did not know the story of his mother's experience until he became an adult. However, he recalls that at age 5, when entering school, he could feel his mother's tension, her elevated heart rate, and her palpable fear as she took him to his first day of school. These feelings of anxiety may have impacted Awan's school experience. He was labeled a slow learner and resistant within his first week at school.

The same year Awan lost his aunt to suicide, his grandmother to a heart attack, and his closest cousin was "taken away," thus compounding the negative experiences he already had.

2.17 Complex Trauma

For children and youth with histories of foster care or institutional care, *complex trauma* may best describe their experiences. This is a term used for experiencing, and the impact of experiencing, multiple types of trauma, or repeated exposure to the same type of trauma, over time.

Children and youth who experience multiple traumas, and/or prolonged traumatic stress or complex trauma, experience its impact in many domains of functioning and across developmental stages. The impact of complex trauma will be discussed in more detail in the next lesson, along with the proposed diagnostic category, Developmental Trauma Disorder.

3. Adverse Childhood Experiences

3.1 Adverse Childhood Experiences

The Adverse Childhood Experiences (ACEs) Study is one of the largest investigations ever conducted to assess connections between chronic stress caused by early adversity and later-life health.

3.2 Adverse Childhood Experiences

Watch the following primer on ACEs.

[Video Transcript]

NARRATOR: Here's what you should know about ACEs. ACEs stand for Adverse Childhood Experiences. Extremely stressful events that can happen to a child growing up.

Some experiences are so stressful that they can alter brain development, as well as the immune system, increasing the risk of lifelong health and social problems in adulthood.

The term comes from the Adverse Childhood Experiences Study, landmark research that shed new light on the root cause of everything from stroke and liver disease to substance abuse and mental illness.

In the late 1990s an epidemiologist from the Centers for Disease Control and a Preventive Medicine Doctor at Kaiser Permanente set out to understand the association between childhood experience and lifelong health. They asked over 17,000 people in the Kaiser Health Plan in San Diego about their health history, as well as difficult questions about their experiences growing up.

They saw that the more ACEs someone had, the greater their risk for poor outcomes, compared with someone with no ACEs. Someone with an ACE score of 4 had twice the risk of heart disease and cancer.

Someone with an ACE score of 5 had an eight-times greater chance of being an alcoholic. And those with an ACE score of 6 or more, on average died 20 years earlier. With every major problem they looked at in the ACE study, the risk went up for each additional adverse experience in childhood.

[End of Video]

3.3 Adverse Childhood Experiences

The ten ACEs are:
1. Physical abuse
2. Sexual abuse
3. Emotional abuse
4. Physical neglect
5. Emotional neglect
6. Mother treated violently
7. Substance misuse within household
8. Household mental illness
9. Parental separation or divorce
10. Incarcerated household member

The complete ACEs survey, *Finding Your ACE Score,* is in the Resources tab.

3.4 ACEs Research

Some key findings from this groundbreaking study include the following.

Click on each tab to hear more.

1. The more ACEs someone had, the greater their risk for poor outcomes compared with someone with no ACEs. For example, someone with an ACE score of four had twice the risk of heart disease and cancer.

2. Adverse childhood experiences rarely occur in isolation, but rather occur in groups; for example, the extent to which a child witnessed domestic violence increased the likelihood that they also experienced emotional, physical, or sexual abuse.

3. Sixteen percent of the adults in the original study reported 4 or more ACEs compared to more than half of the children involved in child welfare. This level is associated with a more than 12-fold increase in negative health and mental health outcomes.

4. It is important for adoptive parents to know that the love and stability they offer is essential in mitigating the negative impacts of ACEs. As a clinician, you need to assess the parent's ability to provide this nurturance and stability to assure an environment for children to thrive. You may also need to provide the therapeutic parenting strategies parents require to assure the nurturing and stable environment their children need.

5. In a study by Bruskas and Tessin (2013), researchers examined ACEs and the psychosocial well-being of women who were in foster care as children. The study found that the participants reported experiencing an average of 5.68 ACEs and experienced psychological distress both before and during their foster care experiences. Findings also suggest that clinicians trained to address and manage the unique developmental needs of children in foster care may help reduce the effects of ACEs and optimize developmental health.

4. How Trauma Shapes Development

4.1 How Trauma Shapes Development

With an understanding of the various types of trauma, now let's shift to talk about how trauma impacts development.

4.2 Brain Neurobiology

Brain development occurs through the process of creating, strengthening, and discarding connections among the neurons. These connections are called synapses.

Click on each number to learn more.

1. Synapses organize the brain by forming pathways that connect nerve cells or neurons. These organized parts of the brain govern everything an individual does. At birth, very few synapses have been formed. The synapses present at birth are primarily those that govern bodily functions such as heart rate, breathing, eating, and sleeping.

2. The development of synapses occurs at an astounding rate during a child's early years in response to the child's experiences. At its peak, the cerebral cortex of a healthy toddler may create 2 million synapses per second. By the time children are 2 years old, their brains have approximately 100 trillion synapses, many more than they will ever need.

3. Based on the child's experiences, some synapses are strengthened and remain intact, but many are gradually discarded. This process of synapse elimination—or pruning—is a normal part of development. By the time children reach adolescence, about half of their synapses have been discarded, leaving the number they will have for the rest of their lives.

4. The brain continues to grow and develop into young adulthood -- at least to the mid-twenties. Right before puberty, adolescent brains experience a growth spurt that occurs mainly in the frontal lobe, which is the area that governs planning, impulse control, and reasoning. There is also an increase in white matter and changes to neurotransmitter systems.

4.3 Effects of Maltreatment on Brain Structure and Activity

Child maltreatment can have a variety of negative effects on children's brain functions. Click on each section of the brain and learn about the impact of child maltreatment on that part of the brain.

1. Cerebral cortex: Trauma negatively affects emotional and social regulation and cognition

2. Corpus callosum: Trauma negatively affects the ability of the brain to communicate across the right and left hemispheres, to regulate arousal and emotion, and to utilize higher cognitive abilities

3. Cerebellum: Trauma negatively affects the coordination of motor behavior and executive function

4. Hippocampus: Trauma negatively impacts learning and memory; reduces the ability of the hippocampus to bring cortisol levels back to normal after stress

5. Amygdala: Trauma causes over-activity in this area, negatively impacting the ability to determine whether a stimulus is threatening and trigger emotional responses.

4.4 Effects of Maltreatment on Behavioral, Social and Emotional Functioning

We know that these changes in brain structure and chemical activity caused by child maltreatment can have a wide variety of effects on children's behavioral, social, and emotional functioning. Let's discuss some specific examples. Click on each effect to learn more.

4.5 Persistent Fear Reflection

Science shows that early exposure to circumstances that produce persistent fear and chronic anxiety can have lifelong consequences by disrupting the developing architecture of the brain.

A 4-year-old child raised in a physically abusive household and now living with her adoptive family shows heightened sensitivity to any adult whose face seems angry.

What is happening in this child's brain?

4.6 Persistent Fear Response

Consider the following:

- The child's neuronal pathways involved in the fear response have been chronically activated and she has created persistent memories that shape her perception of, and response to, the environment.
- Learning to quickly and successfully identify anger to avoid being harmed is a highly adaptive and appropriate response to her early abusive environment.
- While this adaptation may be necessary for survival in a hostile world, it can become a way of life that is difficult to change, even if the environment improves.
- Children with a persistent fear response may lose their ability to differentiate between danger and safety, and they may identify a threat in a non-threatening situation.

4.7 Hyperarousal Reflection

Hyperarousal occurs when children and youth are exposed to chronic traumatic stress and their brains sensitize the pathways for the fear response and create memories that automatically trigger that response without conscious thought.

An 8-year-old, adopted from Ethiopia who experienced physical and emotional abuse at the hands of his birth parents, flinches anytime the teacher lightly touches him and praises him. What is happening in this child's brain?

4.8 Hyperarousal Response

Consider the following:

- Children and youth exposed to chronic maltreatment may be highly sensitive to nonverbal cues, such as eye contact or a touch on the arm, and they may misinterpret them.
- This child is constantly monitoring nonverbal cues for threats. His brain is less able to interpret and respond to verbal cues, even when he is in an environment typically considered nonthreatening, like a classroom.
- The child's brain is constantly on alert and is unable to achieve the relative calm necessary for learning.

4.9 Increased Internalizing Symptoms Reflection

A child with internalizing symptoms keeps their feelings, like sadness and guilt, inside, which may manifest itself in such ways as unexplained physical symptoms, social withdrawal, and suicidal thoughts or behaviors.

A 15-year-old who was severely neglected as a young child has been brought to a mental health professional by his kinship parents because he is expressing unrealistic fears, has developed compulsive cleaning rituals, and seems to almost always have a worried facial expression. What is happening in this young person's brain?

4.10 Increased Internalizing and Externalizing Symptoms Response

Consider the following:

- Child maltreatment can change the structure and chemical makeup in the areas of the brain involved in emotion and stress regulation.
- Research indicates that maltreatment can affect connectivity between the amygdala and hippocampus which can then initiate the development of anxiety and depression by late adolescence.
- Early emotional abuse or severe deprivation may permanently alter the brain's ability to use serotonin, a neurotransmitter that helps produce feelings of well-being and emotional stability.
- Posttraumatic dysregulation of affect and behavior may result in academic or learning impairments and diminished self-esteem.
- Likewise, complex trauma is linked with failure to adequately develop self-regulation abilities and with externalizing symptoms. A study of children in an outpatient child psychiatric clinic found that children with diagnoses related to externalizing behaviors had high levels of trauma exposure in their histories and high levels of trauma-related symptoms (Ford, Racussin, Ellis, et al., 2000).

4.11 Diminished Executive Functioning Reflection

There are three components of executive functioning:

- Working memory: Being able to keep and use information over a short period of time
- Inhibitory control: Filtering thoughts and impulses
- Cognitive or mental flexibility: Adjusting to changed demands, priorities, or perspectives

A 10-year-old girl adopted from an Eastern European country after spending more than five years in an understaffed institutional setting has great difficulty organizing herself to get ready for school and do her homework. She often forgets what her parents tell her only a few minutes after they tell her. What is happening in this child's brain?

4.12 Diminished Executive Functioning Response

Consider the following:

- The structural and neurochemical damage caused by maltreatment can create deficits in all areas of executive functioning.
- When a child's or youth's executive functioning skills are negatively impacted, they may struggle academically, have difficulty with social interactions, and be unable to maintain focus long enough to complete everyday activities.

4.13 Complicated Social Interactions Reflection

Childhood social and personality development emerges through the interaction of social influences, biological maturation, and the child's representations of the social world and the self. This interaction is impacted by the child's significant relationships, the development of social understanding, the growth of personality, and the development of social and emotional competence in childhood.

A 6-year-old who lives with his kinship parents and who was exposed to severe abuse and neglect by his birth parents is struggling to get along with his peers in school. He often gets angry at the other children for reasons that are not clear to them or his teacher. What is happening in this child's brain?

4.14 Complicated Social Interactions Response

Consider the following:

- Toxic stress can alter brain development in ways that make interaction with others more difficult. Children and youth exposed to toxic stress may find it challenging to navigate social situations and adapt to changing social contexts.
- Children and youth with these histories may perceive threats in safe situations and react accordingly, causing difficulty in their interactions with others.
- This child may be misinterpreting a peer's neutral facial expression as anger, which may cause the maltreated child to become aggressive or overly defensive toward the peer.

5. Key Concepts About Brain Development

5.1 Key Concepts About Brain Development

There are four key concepts that we would like you to keep in mind about brain development:

1. Plasticity
2. Use it or lose it
3. Sensitive periods, and
4. Stress response

5.2 Key Concepts

Click on each concept to learn more. After you are finished with each topic, click Continue.

5.3 Plasticity

Researchers use the term plasticity to describe the brain's ability to change in response to repeated stimulation. The extent of a brain's plasticity is dependent on the stage of development and the brain system or region affected.

Plasticity decreases as a child gets older, but some degree of plasticity remains. In fact, brain plasticity is what allows us to keep learning into adulthood and throughout our lives.

The developing brain's ongoing adaptations are the result of both genetics and experience. The brain prepares the individual to expect certain outcomes and forms pathways needed to respond to those.

For example, our brains are wired to respond to the sound of speech; when babies hear their parents speaking, the speech and language areas of the brain are activated.

5.4 Use It or Lose It

If the appropriate exposure does not happen to wire the brain, the pathways developed in anticipation may be discarded.

This is the concept of "use it or lose it." It is through these processes of creating, strengthening, and discarding synapses that the brain adapts to its unique environment, whether positive or negative.

5.5 Sensitive Periods

Researchers believe that there are sensitive periods for the development of certain capabilities. These are windows of time in the developmental process when certain parts of the brain may be most susceptible to particular experiences.

Research shows that if certain synapses and neuronal pathways are not repeatedly activated, they may be discarded, and their capabilities may diminish.

5.6 Positive Neuronal Pathways

Although sensitive periods exist for development and learning, the plasticity of the brain often allows children to recover from missing certain experiences.

In the book *A General Theory of Love*, the authors describe the therapeutic process as the creation of positive neuronal pathways that begin to compete with, and hopefully take dominance over, the neuronal pathways dedicated to trauma.

Click the corner of the page to hear more.

They posit that loving human relationship is the primary source for neuronal pathways dedicated to safety, security, love, and belonging.

Healing approaches that teach generosity, gratitude, forgiveness, humility, courage, service, respect, and spirituality are directly aimed at this process.

5.7 Classifications of Stress

The National Scientific Council on the Developing Child (2014) outlines three classifications of stress: Positive Stress, Tolerable Stress, and Toxic Stress. Click on each category to learn more.

1. Positive Stress: Positive Stress is stress that is moderate, brief, and generally part of a normal life, such as a toddler enters child care for the first time.

2. Tolerable Stress: Tolerable Stress is defined as events that have the potential to alter the developing brain negatively, but are infrequent, and there is time for the brain to recover, such as distress a child or youth feels when their parent is hospitalized.

3. Toxic Stress: Toxic Stress is stress that is strong and frequent and activates the body's stress response center in a prolonged way, such as the stress that is experienced as a result of chronic neglect, physical, or sexual abuse.

5.8 Stress Response

Stress responses involve a variety of hormone and neurochemical systems throughout the body, including adrenaline and cortisol. In a healthy stress response, both adrenaline and cortisol levels increase but then return to normal levels after the stressful experience has passed.

When stress reaches toxic levels, adrenaline and cortisol levels remain at elevated levels. Toxic stress changes the structure and chemical activity of the brain and impacts the emotional and behavioral functioning of the child or youth.

For more information on the impact of trauma, see Handout: *Understanding the Effects of Maltreatment on Brain Development* in the Resources tab.

5.9 Trauma and Behavior

By way of summary, watch the following video in which social worker Laura Phipps with the Family and Children's Resource Program describes the effect of trauma on the brain and the impact in terms of children's behavior. This video is also linked in the Resources tab for you to use in your work with families.

[Video Transcript]

LAURA PHIPPS, MSW. Clinical Instructor: Family and Children's Resource Center FRCP

It's a very complicated subject; there's lots of research on the topic. But I think really it's important to think about three big things, and the first of those is how trauma affects cognitive development and the development of the structures of the brain.

So in the most basic terms, when children are experiencing trauma there is a release of stress hormones. For all of us, when anyone's experiencing any kind of trauma or fear, we have that fight or flight response. When children are having repeated traumatic events, there is an overabundance of that stress hormone in the brain and we know that that causes actual damage to the development of the structures of the brain.

What that also does is creates this sort of "always-on" state of alert, where there's an overabundance of the cortisol--that's the hormone in the brain--and children are always in that hyper-vigilant state, to protect themselves. What that does, as far as brain development is, that sort creates a situation where the other neural pathways are not able to develop as well as they should, or in a timely manner, during those critical periods. And so the parts of our brain that regulate decision making, emotional regulation, judgment--all that higher-order thinking--is less developed when kids are experiencing repeated traumatic events.

What that means for behavior is that we have actual cognitive delays for kids with a trauma history. They can have lower IQ; they can have problems with language development; they can have problems with judgment and decision making. And so in terms of behavior, if you think about how that kind of disruptive brain development impacts behavior, so much of the way we interact with the world is through language.

When we're giving instructions to kids we often use a lot more words than we should. We also expect that kids can make good choices and so we give choices. We think that they understand what those choices are, but if you have cognitive impairment, if you're having difficulty understanding language, you're going to have difficulty understanding what you're supposed to be doing in those situations.

And the typical strategies that we might use with kids who don't have that kind of impairment are not going to be as effective. So that's one big area, that it affects behavior.

The second thing you really need to think about is the issue of attachment. And again--we could have an entire class on attachment--but the basic, most simple level, we know that a secure attachment is the foundation of all further development--that we need to have that secure attachment during those early years.

Children who have been traumatized--particularly from their primary caregiver--have really disorganized attachment, because the person from whom they're going to go to--to feel safe, to learn trust, to learn that the world is predictable and loving place--is also the person that is perpetrating the scary and traumatic event on them.

And that is incredibly confusing. In order to understand the world, it doesn't make a lot of sense, and so these children don't know how to trust the world around them. They feel like they don't know how to get their needs met, and so that foundation for future relationships is very much impaired.

So again, if you think about so much of what we have to do in the world to be successful is to interact with others--to read social cues to understand what the interaction is between us and other people--if you have that disorganized attachment as a foundation of understanding the world, you're going to have a lot of difficulty with that. So many behaviors that we see from children with a trauma history are a result of just not having that secure attachment.

And then the third thing that's very important, especially when you have a child in your home who has a trauma history, is understanding trauma triggers. And what that means is that there are going to be things that remind the child of the trauma, but they might not be readily apparent to everyone around them. So if you think about your own memories, things that trigger memories--you know, smells, sights, sounds--all those things can immediately take you back to a positive moment in your childhood.

With children who have traumatic history, where that's been the majority of their experience, those exact same triggers take them back to this very scary place. But they may not be evident to us, so it might seem like a normal transition from going to bedtime but something about that event--the lighting, the location--triggers a traumatic memory, and the child's going to react as if that's happening at that time. Those reactions are behaviors that children developed in order to stay safe, and so they were very adaptive behaviors.

However, we might see them as bad behaviors, or negative behaviors. So it's really important to understand that those reactions are important. They helped the child survive; they helped the child get through a very difficult experience, and it's going to take a while to unravel that. So it's important to try to understand as much as possible [MUSIC COMES IN] of the child's history so that we can start to look at these trauma triggers and help them move past them.

[End of Video]

6. Conclusion

6.1 Wrapping Up

As we can see, complex trauma is the result of strong, frequent, and/or prolonged biological responses to adversity. It can damage the architecture of the developing brain and increase the likelihood of significant mental health problems that may emerge either quickly or years later.

Because of its enduring effects on brain development and other organ systems, trauma can impair school readiness, academic achievement, and both physical and mental health in children and youth that endure into adulthood.

6.2 Learning Journal

Please click on the journal page to write down your reflections on this lesson.

6.3 Journal Reflection

Reflecting on this lesson, what are your key takeaways and how might you apply these in your practice?

6.4 Journal Response

Click the "Print Results" button to print and save your answers.

6.5 Conclusion

Congratulations! You have now completed Traumatic Experiences of Children Achieving Permanency Through Adoption and Guardianship.

In the next lesson, we will focus on frameworks for understanding the impact of trauma on development and mental health.