



## Trauma-Informed Care for Youth in Foster Care



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### ABSTRACT

For decades, evidence has shown an undeniable connection between childhood trauma and chronic adverse reactions across the lifespan (Bilchik & Nash, 2008; Perry, 2001; Perry, 2006). Childhood traumatic experiences are associated with serious and persistent, long-term physical, psychological, and substance abuse issues. In addition to adverse effects on physical health, research indicates that early childhood trauma has particularly adverse effects on adolescent self-esteem, coping skills, school performance, self-regulation, critical thinking, self-motivation, and the ability to build healthy relationships (O'Connell, Boat, & Warner, 2009). A traumatic event is a dangerous or distressing experience, outside the range of usual human experience that overwhelms the capacity to cope and frequently results in intense emotional and physical reactions, feelings of helplessness and terror, and threatens serious injury or death (The National Child Traumatic Stress Network [NCTSN], 2014). Approximately five million children each year in the United States experience some type of traumatic experience (Perry, 2006). Nationwide community studies estimate between 25% and 61% of children and adolescents have a history of at least one exposure to a potentially traumatic event and 38.5% of American adults claim to have experienced at least one traumatic event before the age of 13 (Briggs et al., 2012; Gerson & Rappaport, 2013). According to results of a 2002–2003 survey of 900 New York City adolescents, 24% reported a history of witnessing someone being shot, 12% reported exposure to someone being killed, and 51% reported witnessing someone being beaten or mugged (O'Connell et al., 2009). Each year, 2–3 million children are victims of maltreatment, a type of trauma, including physical and/or sexual abuse (U.S. Department of Health and Human Services, 2014; Perry, 2006). Compared to the general population, youth in foster care are significantly more likely to have experienced violence, specifically abuse and/or neglect (Burns et al., 2004). It is estimated that approximately 90% of children in foster care have experienced a traumatic event, with nearly half reporting exposure to four or more types of traumatic events (Stein et al., 2001). Given the widespread prevalence of traumatic exposures, it is important for the mental health professionals working with foster care youth, to be aware of the prevalence and various types of trauma that are most common. Focus in treatment is typically on behavioral and emotional reactions rather than addressing the context of these symptoms, including trauma exposure histories and trauma-specific reactions. Clinicians must maintain awareness of the frequency and impact of childhood traumatic experiences on subsequent behaviors and overall functioning. Clinicians should appreciate the link between how traumatized children understand the world and interact with others differently from other children and how to provide appropriate treatment for children with a history of traumatic exposures. Practitioners must remain alert to symptoms that may suggest a history of trauma and must have an understanding of the difficulties adolescents may face regulating their emotions and behavior, as a symptom of a past traumatic experience. The failure to address trauma through screening, assessment, and treatment has major implications for long-term public health costs and services.

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For decades, evidence has shown an undeniable connection between childhood trauma and chronic adverse reactions across the lifespan, particularly manifesting in adolescence (Bilchik & Nash, 2008; Perry, 2001, 2006). A traumatic event is a dangerous or distressing experience, outside the range of usual human experience that overwhelms the capacity to cope and frequently results in intense emotional and physical reactions, feelings of helplessness and terror, and threatens serious injury or death (National Child Traumatic Stress Network [NCTSN], 2014). Approximately five million children, each year in the United States,

experience some type of traumatic experience (Perry, 2006). In 2010, state child protective service agencies received 3.3 million reports of child abuse and neglect (U.S. Department of Health and Human Services, 2011). Nationwide community studies estimate between 25% and 61% of children and adolescents have a history of at least one exposure to a potentially traumatic event and 38.5% of American adults claim to have experienced at least one traumatic event before the age of 13 (Briggs et al., 2012; Gerson & Rappaport, 2013). According to results of a 2002–2003 survey of 900 New York City adolescents, 24% reported a history of witnessing someone being shot, 12% reported exposure to someone being killed, and 51% reported witnessing someone being beaten or mugged (O'Connell, Boat, & Warner, 2009).

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Each year, 2–3 million children are victims of maltreatment, a type of trauma, including physical and/or sexual abuse (Department of Health and Human Services, 2014; Perry, 2001; Perry, 2006). Compared to the general population, youth in foster care are significantly more likely to have experienced violence, specifically abuse and/or neglect (Burns et al., 2004). It is estimated that approximately 90 percent of children in foster care have experienced a traumatic event, with nearly half reporting exposure to four or more types of traumatic events (Stein et al., 2001). “A significant number of children, including children with no contact with child welfare, are exposed to traumatic life events, and childhood trauma is one of the most serious and prevalent public health problems in the United States” (National Child Abuse & Neglect Data System [NCANDS], 2013). Given the widespread prevalence of traumatic exposures, it is important for the mental health professionals working with foster care youth, to be aware of the prevalence and various types of trauma that are most common. Focus is typically on behavioral and emotional reactions rather than addressing the context of these symptoms, including trauma exposure histories and trauma-specific reactions. Clinicians must maintain awareness of the frequency and impact of childhood traumatic experiences on subsequent behaviors and overall functioning of an adolescent. Clinicians should appreciate the link between how traumatized children understand the world and interact with others differently from other children and how to provide appropriate treatment for children with a history of traumatic exposures. Practitioners must remain alert to symptoms that may suggest a history of trauma and must have an understanding of the difficulties adolescents may face regulating their emotions and behavior, as a symptom of a past traumatic experience. The failure to address trauma through screening, assessment, and treatment has major implications for long-term public health costs and services.

This paper aims to; 1) provide information related to the effect of childhood trauma on children and adolescents, specifically maltreatment or neglect, 2) explore the current effective trauma-specific screening instruments available for mental health practitioners for children and adolescents, 3) provide practice recommendations for the trauma-exposed child, including the importance of early identification and intervention as efforts to promote healing and growth and to provide substantial improvement in functioning.

## CHILDHOOD TRAUMA

Trauma manifests as either a single event or prolonged over time. A single traumatic event includes medical procedures, natural disasters, war zone trauma, and terrorism (Jennings, 2004). Survivors of a single traumatic event are less likely to develop long-term sequelae than victims of “complex trauma.” “Complex trauma” describes prolonged exposure to traumatic experiences associated with serious, persistent, frequent, intentional, and often interpersonal in nature (Jennings, 2004). Prolonged traumatic exposure may include long-term exposure to familial or community violence or maltreatment (Jennings, 2004). The most prevalent form of long-term trauma is maltreatment (Jennings, 2004).

### Childhood Maltreatment

According to the Centers for Disease Control and Prevention (CDC), child maltreatment is “any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child.” (Leeb, Paulozzi, Melanson, Simon, & Arias, 2008, p.1). The four variants of maltreatment, which frequently co-occur are; 1. neglect, including lack of provision or lack of supervision, 2. non-accidental physical abuse which may result in death, injury, or visible marks, 3. sexual abuse including genital or oral penetrative or non-penetrative contact or sexual exposure and exploitation and, 4. emotional abuse, including emotional hostility and rejection, and developmentally inappropriate interactions (Glaser, 2005). Maltreatment is

distinct from other types of trauma because it is interpersonal in nature and it's one of the most potent risk factors for future mental, emotional, and behavioral problems (O'Connell et al., 2009). According to the NCANDS (2013), children between birth and two-years of age had the largest percentage of reported maltreatment cases. It's estimated that more than 80 percent of perpetrators of child maltreatment were parents and 6.1 percent were other relatives (Department of Health and Human Services [USDHHS], 2014).

In the United States in 2012, there were an estimated 1,640 child fatality victims due to maltreatment, an average of 31 children per week (USDHHS, 2014). 77% of child fatalities were under four years old, and 42.4% were less than one year old (USDHHS, 2014). In the U.S., the annual estimated direct cost of medical care for child victims of maltreatment (i.e. abuse and neglect) was \$33,333,619,510 (USDHHS, 2014). According to the Adoption and Foster Care Analysis and Reporting System (AFCARS) as of September 30 2013, there were 402,378 children in foster care secondary to maltreatment (USDHHS, 2014).

### Neglect

According to the CDC (2014), “child maltreatment includes all types of abuse and neglect of a child under the age of 18 by a parent, caregiver, or another person in a custodial role (e.g., clergy, coach, teacher).” According to the National Child Abuse and Neglect Data System (2013), most states recognize four types of maltreatment, including neglect, physical abuse, sexual abuse, and psychological trauma (NCANDS, 2013). Potentially more harmful than physical abuse, neglect has been found to be the most common type of maltreatment and may be the most harmful form of abuse to child or adolescent development (Widom & Maxfield, 2001). In 2012, the United States Department of Health and Human Services estimated 686,000 children were victims of abuse and neglect, nationwide, with children two-years and younger the most likely to be victims (USDHHS, 2014). Neglect consisted of approximately 78% of victims, 18% suffered from physical abuse, 9% suffered from sexual abuse, and 8.5% of victims suffered psychological maltreatment (USDHHS, 2014).

From 2008–2012, 78.3% of victims of childhood maltreatment in the United States suffered neglect. Of the total number of children that died as a result of maltreatment, 69.9% were the result of neglect (Administration for Children and Families [ACFS], 2013; NCANDS, 2013). Research has shown that even mild forms of neglect such as a dirty home, have adverse outcomes on adolescent development and may lead to poor physical and mental health well into adulthood (Chapple, Tyler, & Bersani, 2005). Immediate and long-term effects of childhood neglect are profound, yet neglect is notoriously difficult to detect (Widom & Maxfield, 2001).

### Consequences of Childhood Trauma

The Adverse Childhood Experiences Study (ACE) is one of the largest research investigations examining the link between childhood stressors and long-term consequences on adult health. Detailed information of a childhood history of abuse, neglect, and family dysfunction as well as current behaviors and health status were assessed for over 17,000 adult study participants (Centers for Disease Control and Prevention [CDC], 2014). Trauma during the early years of life has been linked to negative, immediate, and long-term outcomes of normal social, emotional, and cognitive development, and long-term physical and mental health (D'Andrea, Ford, Stolback, Spinazzola, & van der Kolk, 2012; Perry, 2001, 2006). A study recently published in the Gilbert et al. (2015) showed victims of adverse childhood experiences have higher rates of asthma and obesity and lower school performance (Gilbert et al., 2015).

Data obtained from the ACE Study has shown a link between adverse childhood experiences and an increase in the long-term risk of suffering from stroke, diabetes, cardiovascular disease, lung and liver disease,

hypertension, asthma, diabetes, and cancer (CDC, 2014). Adults in the ACE study with a history of multiple adverse childhood experiences were at increased risk for a poor quality of life and premature illness and were likely to die 20 years sooner than those with no history of adverse childhood experiences (Anda et al., 2004; Dube, Felitti, Dong, Giles, & Anda, 2003). In addition, exposure to traumatic events during childhood increased the risk of developing social (e.g. school failure, victimization) and neuropsychiatric problems (e.g. dissociative disorders, conduct disorders) that continue into adulthood (CDC, 2014).

Children with a history of trauma are at risk of developmental delays across the spectrum including lower scores on measures of cognitive functioning and motor and language skills (Prasad, Kramer, & Eging-Cobbs, 2005). Victims of childhood trauma have difficulties developing strong and healthy attachments and lack skills of effective, interpersonal behaviors. They frequently develop disturbed social-emotional functioning and interpersonal relationships, which result in difficulties in the classroom, in the workplace, and in their communities (Anda et al., 2004). Studies demonstrate that certain traumatic experiences in childhood are related to an increase in risky health behaviors in later childhood and adolescence, including teenage pregnancies, suicide attempts, early-initiation of smoking, sexual activity, and illicit drug use (CDC, 2014).

Early childhood adversity has been shown to contribute to the development of several adult mental illnesses including mood, anxiety, personality, and substance abuse disorders. Coleman, Kim, Mitchell-Herzfelt, and Shady (2008) tracked New York State delinquents into adulthood and found trauma, specifically childhood maltreatment, to be associated with an increased risk of developing adult antisocial behavior and becoming an adult perpetrator of maltreatment, regardless of gender (Coleman et al., 2008). An investigation completed in the Midwest United States found a history of maltreatment increased the likelihood of delinquency by 47% to 55% for any arrest and increased the likelihood of arrest for a violent offense as a juvenile, by 96% (Ryan & Testa, 2005; Widom, 2003).

## RISK AND RESILIENCY FACTORS OF CHILDHOOD MALTREATMENT

The immediate and long-term effects of childhood maltreatment are mediated by risk and resilience factors. The long-term effects of maltreatment are dependent on age, developmental status, the type of maltreatment, the relationship between the child and the perpetrator, and the severity, duration and frequency of the maltreatment. Factors that increase the risk of a negative reaction to maltreatment include the presence of community stressors such as poverty, chronic trauma, cognitive delays, psychiatric co-morbidities, and the impaired functioning of the family or adult support (American Psychological Association [APA], 2008; CWCG, 2008). Long-term effects also depend on environmental factors including attachment and social support (Gerson & Rappaport, 2013). The type of maltreatment, the frequency, developmental competencies, and the current stage of the developing brain also determine the impact of the trauma (Gerson & Rappaport, 2013).

## PHYSIOLOGICAL RESPONSE TO TRAUMA

### *Normal Brain Function*

Through a combination of genetic influences and experiences, the normal human brain undergoes changes in structure and function across the lifespan. The effects of early life trauma has a greater impact and is distinct from the effects of traumatic experiences later in life because the fine details of brain organization occur during critical windows between infancy and adolescent development (O'Connell et al., 2009). Neurons are created, organized, connected, and pruned to form a complex architecture used to develop the skills and capacities required throughout a lifetime (O'Connell et al., 2009). Dendritic elaboration and synapse formation in the brain continues through adolescence

and into young adulthood (O'Connell et al., 2009). Areas of the brain that contribute to the regulation of thought, behavior, and attention processes undergo synaptic pruning to develop more efficient neural pathways for specific developmental tasks during adolescence (O'Connell et al., 2009). Early childhood trauma, including maltreatment, has been shown to alter brain development and neurochemical pathways away from a healthy trajectory and has been shown to have lasting effects that lead to the disruption of typical development and functioning by inhibiting neuronal connections that are important for the body's stress response and other complex tasks (Kindsvatter & Geroski, 2014).

### *Brain Response to Threat*

Directed by the brain, the human mind and body have a set of important and very predictable responses to threat. These reactions are highly adaptive and involve many coordinated and interrelated neurophysiological responses. As an individual is threatened, the brain 'activates' the neurophysiological response. Individual responses to a threat are along a continuum between dissociation and hyperarousal; some combination of the two adaptive styles.

A primary hyperarousal response is an increase in the sympathetic nervous system activity and includes an increase in heart rate, blood pressure, respiration, and muscle tone (Cloitre et al., 2009). Dissociation is a mental mechanism by which one withdraws attention from the outside world and experiences a detached feeling. Victims of trauma frequently over- or under- respond to sensory stimuli. For example, victims of trauma may be hypersensitive to sounds, smell, touch or light, or they may suffer from anesthesia and analgesia, in which they are unaware of pain, touch, or internal physical sensations (Cloitre et al., 2009). As a result, victims may injure themselves without feeling pain, suffer from physical problems without being aware of their existence, or, the converse – they may complain of chronic pain in areas for which no physical cause is found (Cloitre et al., 2009). Victims of early childhood adversity frequently suffer from affective body dysregulation, including anxious arousals, anger management, dissociative symptoms, and aggressive or socially inappropriate behaviors (Cloitre et al., 2009).

### *Brain Response to Stress*

Stress is regulated by the hypothalamic-pituitary axis (HPA), which controls the release of cortisol. Exposure to trauma interrupts the HPA and is associated with an increased response of cortisol and norepinephrine during subsequent stressors. The immediate effect of childhood maltreatment includes anxiety, mood disturbances, interpersonal detachment, and increased arousal and behavioral issues (Gerson & Rappaport, 2013). Abnormal patterns of cortisol result in an increased heart rate, abnormal adrenal activity, abnormal blood pressure, a weakened immune system, and is related to internalizing behaviors, including depression and anxiety (CWCG, 2008; Manly, Kim, Rogosch, & Cicchetti, 2001; NSCDC, 2012). Long-term disruption of cortisol has been shown to suppress brain cell division and branching, and sustained, long-term, high levels of cortisol may damage the hippocampus causing dysregulation of learning and memory (Gerson & Rappaport, 2013). These cognitive deficits continue into adulthood (Gerson & Rappaport, 2013).

A notable increase in blood adrenocorticotrophic (ACTH) and corticotropin-releasing factor (CRF) following a mild stressor (i.e. test or public speaking) has been shown in adults with a history of child abuse (Heim & Nemeroff, 2001). Consistent, high levels of chronic stress during childhood cause neurobiological and neurophysiological changes in brain functioning from a process known as methylation and the subsequent alterations in DNA structure (NSCDC, 2012). Research on animal models indicate that early trauma causes an increase in the expression of brain receptors that regulate fear and anxiety that is

associated with later life stress response dysregulation including insufficient inhibitory control and increased symptoms of hyper-arousal, (Kindsvatter & Geroski, 2014; Ozkol, Zucker, & Spinazzola, 2011; Sánchez, Ladd, & Plotsky, 2001). In addition, neuronal connections that have been disrupted are at risk of causing the dysregulation of movement, sensation, and an increased hypersensitivity to pain (CWCG, 2008; Gerson & Rappaport, 2013; National Scientific Council on the Developing Child [NSCDC], 2012; Trauma Center at the Justice Resource Institute, 2011).

Self-regulation includes the management of actions and emotions and includes the ability to voluntarily label and suppress unpleasant emotions (O'Connell et al., 2009). The lack of self-regulation and control is one of the strongest predictors of future psychopathology (O'Connell et al., 2009). Victims of childhood neglect, a type of maltreatment, have shown an overall reduced brain volume, specifically the amygdala, the cerebral cortex, and the anterior cingulate cortex, potentially disrupting the development of self-regulatory control (Adams, 2011; CWCG, 2008; NSCDC, 2012; O'Connell et al., 2009). Studies have shown that the corpus callosum in victims of neglect is 17% smaller than control subjects, resulting in potential deficits in executive functioning and personality (Teicher, Dumon, Vaituzis, Giedd, & Andersen, 2004). Dysregulation of the amygdala, caused by an early exposure to trauma, overwhelms the limited coping skills available to a developing child and is responsible for affect problems characterized by heightened emotional reactions and hyperarousal to minor stressors, violent outbursts and aggressive behavior, reckless or self destructive behaviors, and tendency toward dysregulation and dissociative states when under stress (CWCG, 2008; Gerson & Rappaport, 2013; NSCDC, 2012). Damage to the cerebral cortex is responsible for disturbances in executive functioning and coping mechanisms such as dissociation, problem-solving, and memory deficits (CWCG, 2008; NSCDC, 2012). During adolescence, a reduced cortex size is related to a decrease in appropriate behavior-regulation, an increase in risk-taking behaviors and poor choices, and underachievement (CWCG, 2008).

### *Social Effects*

Survivors of prolonged childhood trauma are at increased risk of delinquency, contributing to the over-population of prisons and overwhelming social services agencies (Ford, Chapman, & Cruise, 2012; O'Connell et al., 2009). According to a survey completed by the Child Welfare League of America (CWLA, 2008), a history of abuse or neglect increased the likelihood of arrest as a juvenile by 59% and arrest for a violent crime by 30% (CWLA, 2008). Maltreated children were younger at the time of their first arrest, committed nearly twice as many offenses, and were arrested more frequently. Studies have shown that youth exposed to multiple traumas have an increased risk of subsequent traumatic exposure (Briggs et al., 2012; O'Connell et al., 2009).

According to the Rochester Youth Development study (RYDS), early childhood maltreatment is significantly related to adolescent delinquency (Thornberry, Krohn, Lizotte, Smith, & Porter, 1998). According to estimates, approximately 93,000 juveniles are arrested annually for violent crimes (Gold, Wolan, & Lewis, 2011). Widom (2003), reported a high prevalence of "crossover youth," defined as adolescents involved in both the child welfare system and the juvenile justice system, indicating a relationship between maltreatment and delinquency (Widom, 2003). In addition, childhood maltreatment is correlated with an increased risk of adolescent bullying, participation in physical fights, and dangerous weapon possession (Chapple et al., 2005; Gerson & Rappaport, 2013). Furthermore, early trauma results in an increased risk of becoming a perpetrator of abuse and violent crimes (Stagman & Cooper, 2010; Taylor & Siegfried, 2005; Widom & Maxfield, 2001). Studies have shown that maltreatment is relevant to understanding the underlying factors of youth delinquent behaviors and are likely to contribute to recidivism (Widom, 2003).

### *Academic Effects*

Children with a history of maltreatment have increased school absenteeism and lower educational achievement (Stagman & Cooper, 2010). They are at risk of lower motivation, a disturbed sense-of-self and persistent beliefs of shame, guilt, or failure, a sense of defeat or worthless, and they often struggle to succeed (Stagman & Cooper, 2010). They are at increased risk of becoming adolescents and young adults with mental illness and substance abuse issues that subsequently burden systems of education, welfare, and health care (Cloitre et al., 2009; Ford et al., 2012; O'Connell et al., 2009).

## **THE EFFECTS OF MALTREATMENT ON CHILDREN AND ADOLESCENTS IN FOSTER CARE**

Given the widespread prevalence of persistent maltreatment of children in foster care, 90%, it is important for the mental health professional working with foster care youth, to be aware of the prevalence and various types of trauma that are most common (Stein et al., 2001). Mental health professionals should recognize the link between how traumatized children understand the world and interact with others differently, and how to provide appropriate treatment for children with a history of traumatic exposures. The effects of trauma on the developing child in foster care and the subsequent effect on health and functioning including development, behavior, and interpersonal relationships, increases the importance of implementing trauma-informed treatment and interventions (Child Welfare Collaboration Group [CWCG], 2008).

Adolescence is a period of tremendous growth and preparation for adulthood. Research suggests that childhood trauma, specifically maltreatment, has adverse effects on adolescents, impacting development into adulthood. Healthy adolescent developmental tasks are divided into four primary domains of well-being, including intellectual development (e.g. critical thinking and school performance), social development (e.g. healthy relations with peers), psychological/emotional development (e.g. self-esteem, self-regulation, self-motivation, and coping skills), and physical health (O'Connell et al., 2009). Aspects of healthy functioning within each domain vary according to age, developmental status, environmental supports, and personal characteristics. Healthy adolescent development is critical to the development of skills that promote healthy behaviors and confidence to withstand future life stressors. Mastering the challenges presented during adolescence is critical in the path to become a healthy, productive adult.

## **PRINCIPLES OF WELL-BEING OF ADOLESCENT DEVELOPMENT**

### *Intellectual Development*

The intellectual development of adolescents with a history of childhood maltreatment is impaired due to alterations in brain development and maturation. A significant amount of research concludes that children with a history of maltreatment have a lower IQ and are disproportionately represented within the developmentally delayed spectrum of intellectual functioning (Sandgrund, Gaines, & Green, 1979). Childhood maltreatment, specifically neglect, contributes to psychological distress and functional impairment secondary to cognitive development and language acquisition (D'Andrea et al., 2012; Flaherty et al., 2006; Taylor & Siegfried, 2005). Childhood neglect has been shown to have profound effects on learning and memory, which results in poor academic achievement evident in adolescents (D'Andrea et al., 2012; Flaherty et al., 2006; Taylor & Siegfried, 2005).

### *Social Development*

Failure to develop an appropriate attachment bond in childhood, secondary to neglect, negatively impacts a teen's ability to develop

socially (e.g. meaningful relationships with family members and peers). Adolescent victims of neglect express decreased levels of sensitivity and empathy and they tend to be more aggressive and socially withdrawn (Chapple et al., 2005; O'Connell et al., 2009). Inappropriate processing of the sensory aspects of social situations results in the inability to take perspective and accurately interpret the cues and communications of others (Chapple et al., 2005; O'Connell et al., 2009).

#### *Psychological and Emotional Development*

Psychological and emotional competence is a significant domain of adolescent development and predicts future achievement. Based on early life experiences, children that are unable to develop a model of self as worthy and competent, view themselves as ineffective, helpless, deficient, and unlovable, and frequently have difficulties coping effectively with future traumatic experiences and challenges (Cloitre et al., 2009). Research suggests a direct relationship between maltreatment and an adolescent's feeling of shame (i.e. "I am bad") and frequent conversion of shame into blaming others for unacceptable and violent behavior (Gold et al., 2011). Disturbances in identity development result in maladaptive coping mechanisms, a reduced ability for delayed gratification, heightened impulsivity, an increase in aggressive behaviors, and the tendency to be inattentive and uncooperative (Chapple et al., 2005; Gerson & Rappaport, 2013). Research suggests that these symptoms result from a combination of increased hyperarousal and dissociation (Chapple et al., 2005; Gerson & Rappaport, 2013).

Victims of early childhood maltreatment are at risk of meeting the diagnostic criteria of attention deficit hyperactivity disorder (ADHD). ADHD is a disturbance in emotional and reward-based learning and the absence of self-regulatory control (O'Connell et al., 2009). Frequently, a history of trauma is overlooked in an adolescent diagnosed with ADHD (CWCG, 2008).

#### *Physical Development*

The inability to form adequate, meaningful relationships is often a result of early childhood trauma (Gold et al., 2011). Studies suggest if relationships are not well developed, adolescents are more frequently rejected by peers and are more likely to participate in high-risk activities including risky sexual behaviors and substance use and abuse issues (Gold et al., 2011). Data collected from the ACE study has shown that adolescents with an increased number of adverse childhood experiences were more likely to have 30 or more sexual partners, engage in sexual intercourse earlier, and were more at-risk of contracting AIDS (Deykin & Buka, 1997). In addition, more than 70% of adolescents receiving treatment for substance abuse report a history of trauma exposure (Deykin & Buka, 1997; Funk, McDermeit, Godley, & Adams, 2000). Adolescents with a history of neglect are at increased risk for early marijuana and alcohol use and the compounding emotional and behavioral dysregulation decreases the success of quitting and increases the risk of developing long-term substance abuse issues (Chapple et al., 2005; Deykin & Buka, 1997; Dube et al., 2003; Funk et al., 2000; Gerson & Rappaport, 2013; Hillis, Anda, & Felitti, 2001; O'Connell et al., 2009).

Adverse childhood experiences have consequences for healthy physical, social, emotional, and cognitive development through adolescence and into adulthood. Without early screening and intervention, the long-term effects of early life trauma on physical and mental health may compromise adolescent and future adult functioning.

#### *Screening and Assessment*

Measurement tools consist of both screening and assessment. Trauma-informed screening is a brief and simple tool used to determine whether an individual has a history of traumatic exposures. A trauma assessment refers to a more detailed exploration of a traumatic event, the sequelae of the event, and current dysfunction. High-quality

assessment tools that are valid, reliable, and sensitive enough to distinguish trauma symptoms should be used to understand the impact of maltreatment on vulnerable children and adolescents. Trauma screening should involve brief tools that estimate the prevalence of trauma symptoms or traumatic experiences, and identify children who require further assessment and intervention. There are several empirically-supported instruments that are designed as screening tools used to detect trauma and the associated symptoms in youth.

The Childhood Trauma Questionnaire (CTQ) is 70-item, self-report measure that includes four factor scales that assess the severity and frequency of diverse childhood experiences including emotional/physical abuse, sexual abuse, physical neglect, and emotional neglect; however, the screening does not differentiate between current and past experiences of abuse. In a study with 298 in-patient adolescents, the CTQ demonstrated good sensitivity and specificity and showed satisfactory to high internal consistency (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997; Bernstein & Fink, 1998; Bernstein et al., 1994). The Child and Adolescent Needs and Strengths (CANS) series has been designed to provide information integration and support for case planning and the evaluation of service systems. There have been several versions of the CANS assessment tool beginning with development in the early 1990s. According to the Agency for Healthcare Research and Quality [AHRQ], The CANS-Trauma version (CANS-T) assessment is a comprehensive, trauma-focused and strengths-based assessment tool (Flowers, Hastings, & Kelley, 2000; Goldman-Fraser et al., 2013; Kisiel et al., 2011; Lyons, Almeida, Rauktis, & Lyons, 1999). The CANS series has been extensively researched and studies have shown good validity, demonstrated through the relationship to other measures of similar construct, and item-level reliability (Kisiel, Blaustein, Fogler, Ellis, & Saxe, 2009).

Other available screening tools that focus on symptomatology, rather than the actual history of traumatic exposure include, The Los Angeles Symptom Checklist-Adolescent Version (LASC-Adolescent Version), a 43-item self-report measure of PTSD and associated features (King, King, Lesking, & Foy, 1995). The UCLA Posttraumatic Stress Disorder-Reaction Index (UCLA-PTSDRI) (Nader et al., 1998; Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998), a 22-item, self-report questionnaire screening for PTSD symptoms within the past month, and the Trauma Symptom Checklist for Children, measures the severity of posttraumatic stress and related psychological symptomatology. (Briere, 1996; Dubowitz et al., 2005; Ehari, Gray, Kashdan, & Franklin, 2005),

## **INTERVENTION**

The primary goal of a trauma-informed intervention is to promote meaningful changes to the social and emotional well-being of adolescents who have experienced maltreatment. Trauma-informed treatment includes psychoeducation and the normalization of behavioral and emotional responses to trauma, the development of coping skills, processing of the traumatic event, physical safety, and self-empowerment (Kinniburgh, Blaustein, & Spinazzola, 2005).

There are several empirically supported interventions specifically designed for adolescents with a history of childhood maltreatment such as Trauma-Focused Cognitive Behavioral Therapy (T-CBT), Cognitive Behavioral Intervention for Trauma in Schools (CBITS), Trauma Affect Regulation: Guide for Education and Therapy (TARGET), Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS), and Attachment, Self-Regulation, and Competency (ARC). Specific therapeutic formats include individual or family therapy, group therapy, play therapy, mutual storytelling, therapeutic games, and mindfulness.

The Attachment, Self-Regulation, and Competency (ARC) model is a flexible, comprehensive, evidence-based intervention framework, empirically supported for the treatment of adolescents with a history of maltreatment in childhood. It is used for the treatment of children and adolescents, male and female between 2-21 years of age, who have experienced complex trauma, including maltreatment. The ARC framework offers structure for providers working with trauma-impacted

youth ranging in age from early childhood to young adulthood and allows for adaptation to a particular setting, such as a residential treatment center, school, or outpatient clinic. ARC was identified by the NCTSN Core Data Set as the second most frequently utilized treatment model, nationwide, among a variety of settings for treatment of children that have experienced a wide range of traumatic experiences including emotional, physical, and sexual abuse, traumatic grief, exposure to domestic and community violence, and neglect (ICF International, 2010). ARC is recognized by the Substance Abuse and Mental Health Services Administration and developed in association with The National Child Traumatic Stress Network.

Maltreatment is best understood within the ARC framework because the model recognizes the effects of trauma on child and adolescent development in the four domains of well-being (e.g. intellectual, psychological/emotional, social, and physical). The ARC model is an appropriate framework in treating adolescents with a history of maltreatment because the intervention may be implemented during various stages; ARC may be implemented prior to the traumatic event, during the traumatic event, and/or following a traumatic event, making it appropriate for adolescents who may be at or between stages of trauma (Cloitre et al., 2009). The ARC model emphasizes both the building and the re-building of the core domains of well-being (Kinniburgh et al., 2005).

#### *Conceptual Framework of Attachment, Self-Regulation, and Competency (ARC) Model*

The ARC framework accounts for the connection between childhood maltreatment and adolescent development by incorporating three core domains impacted by the exposure to chronic, interpersonal trauma, relevant to adolescent development and future resiliency: attachment, self-regulation, and developmental competencies (Blaustein & Kinniburgh, 2010; CWCC, 2008; Kinniburgh et al., 2005). Therapeutic processes incorporated into the ARC intervention include individual and group therapy, education and workshops for caregivers, parent-child sessions, psychoeducation, relationship strengthening, and increasing social skills. Treatment methods include psychodynamic, cognitive, behavioral, relaxation, art/expressive, and movement techniques (Cloitre et al., 2009).

#### *ARC core domains*

A brief definition of the ARC core domains and ten building blocks is as follows:

Attachment, one of the core domains impacted by exposure to chronic, interpersonal trauma, is an important part of the ARC framework. Attachment is defined as the emotional bond between humans. As described by John Bowlby (1969), the attachment theory of development describes how children's early relationships contribute to their development and capacity to form future relationships. The attachment theory proposes that the presence of a responsive, consistent, and sensitive caregiver assists a child in recognizing their own emotions and behavior, and allows a child to seek comfort from others, cultivating a child's sense of security, social competency, empathy, and emotional intelligence (Bowlby, 1969). The attachment domain of the ARC model targets the child's caregiving system to help build a safe foundation on which all other competencies are developed. Within the attachment domain, four key building blocks are targeted (e.g. Affect, Attunement, Consistent Responses, Routines and Rituals).

Impaired self-regulation, the second core domain addressed in the ARC framework, is a key component of chronically maltreated youth and includes the ability to identify, modulate and express internal experiences (Cloitre et al., 2009). Self-regulation is acquired through the experiences of modeling, imitation, and reinforcement (Bandura, 1971). Young children rely on their caregiver to help soothe when overwhelmed or distressed (e.g. swaddling, rocking, singing) and, subsequently, children develop sophisticated methods

of regulation that no longer require the assistance of a caregiver. A child that did not develop within a safe and supportive care-giving environment learns alternative ways to cope with distress including hyperactivity, aggression, self-harm, and sleeping problems (Arvidson et al., 2011). Within the regulation domain there are four key building blocks targeted (Affect Identification, Modulation, Affect Expression).

The competency domain, the child's ability to acquire the foundational skills for ongoing development, is the third key domain addressed in the ARC framework. Each developmental stage includes key tasks for normal development. Children that experience chronic maltreatment invest all their energy into survival rather than into achievement of age-appropriate developmental competencies. Therefore, maltreated children frequently lag behind peers in a variety of developmental domains and fail to develop a sense of confidence and efficacy over themselves or their environment (Shonk & Cicchetti, 2001; Toth & Cicchetti, 1996). The competency domain includes three key building blocks (Developmental Tasks, Executive Function, Self and Identity).

#### *The ARC intervention in Adolescence*

Early childhood maltreatment is especially disruptive on adolescent development because of the impact on the four domains of well-being (e.g. intellectual, psychological/emotional, social, and physical). A child with a history of maltreatment, specifically neglect and the associated rejection of the caregiver, fails to form a loving and supportive bond with a caregiver. Lacking this supportive bond results in disturbed social development and frequently leads to the development of unhealthy and destructive relationships that continue into adolescence. The ARC model addresses this real-world example of neglect in the core domain of "Attachment," through cultivation of supportive and safe relationships (Kinniburgh et al., 2005).

The earliest models of self, other, and self in relation to others is developed in the context of the early caregiver relationship (Cook, Blaustein, Spinazzola, & van der Kolk, 2003). A child with a history of maltreatment frequently enters adolescence with a disrupted self-image or a damaged or fragmented sense-of-self. Negative self-esteem has been identified as one of the most common consequences of adolescents with a history of "complex trauma" (Arvidson et al., 2011; Kinniburgh et al., 2005). The ARC model directly addresses the sense-of-self within the building block, "Self and Identity," which is structured to assist the adolescent in understanding of self and to support positive qualities for unique self-identification (Kinniburgh et al., 2005).

"Modulation," including the ability to cope effectively and appropriately modulate emotional responses is another tenet of the psychological and emotional domain of well-being essential for healthy development of children into adolescence, and is the focus of the second building block, Regulation, of the ARC intervention. A child with a history of neglect learns to distrust their emotions and frequently copes with uncomfortable emotions by disconnecting (Cook et al., 2003). Children and adolescents with maladaptive coping often present as withdrawn, hyperactive, and aggressive, and frequently have behavioral difficulties (Arvidson et al., 2011). "Modulation" specifically addresses awareness of internal emotional states and works to assist an adolescent in managing physiological arousal and emotional experiences through the development of effective strategies (Kinniburgh et al., 2005).

In a study implementing the ARC model with complexly traumatized youth in residential settings, it was found there was a significant relation between the use of ARC and reductions in externalizing and internalizing behaviors and use of restraints post-treatment. In addition, youth receiving the ARC intervention showed a statistically significant decrease in their overall level of PTSD symptoms, specifically in hyperarousal and reexperiencing, as measured by the UCLA PTSD screen (Hodgdon, Kinniburgh, Gabowitz, Blaustein, & Spinazzola, 2013).

Adolescents may be in the midst of an ongoing trauma or they may have a history of chronic and/or multiple traumas in childhood. The ARC model is an appropriate framework for the adolescent population because it may be implemented at various stages of trauma: before, during and after. ARC is specifically structured to build or re-build essential core structures and skills of healthy development.

## CONCLUSION

Although childhood trauma has been associated with serious and persistent, long-term physical, psychological, and substance abuse issues, it is rarely viewed as a central issue in health treatment. Evidence shows adolescents, in particular, are severely impacted by the long-term effects of childhood trauma, with lasting impact into adulthood. In addition to adverse effects on physical health, research indicates that early childhood neglect has adverse effects on adolescent self-esteem, coping skills, school performance, self-regulation, critical thinking, self-motivation, and the ability to build healthy relationships (O'Connell et al., 2009).

The Attachment, Self-Regulation, and Competency (ARC) framework is a trauma-informed model of treatment that accounts for the connection between childhood maltreatment and adolescent development. It is applicable and replicable, and is an evidence-based developmental framework that provides guidelines to view the effect of childhood neglect on adolescents, and provides guidelines for the prevention and treatment of future mental health disorders.

Clinicians must be aware of the frequency of childhood traumatic experiences and their impact on subsequent behavior, impact on normal brain development, and overall functioning of an adolescent. Practitioners must remain alert to symptoms that may indicate a past-trauma and must maintain an understanding of the difficulties adolescents may have regulating their emotions and behavior as a symptom of a past traumatic experience. Ignoring or failure to address trauma through screening, assessment, and treatment, has major implications for long-term public health costs and services.

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