Impacts of Adverse Childhood Experiences on Child Attachment, Brain Development, and Affect Regulation: A Teacher’s Guide

A Research Paper and Experiential Project Presented to

Presented to

The Faculty of the Adler Graduate School

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In Partial Fulfillment of the Requirements for

the Degree of Master of Arts in

Adlerian Counseling and Psychotherapy

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June 2015
Abstract

Adverse Childhood Experiences (ACE’s) have been shown to impact attachment relationships, change the structure of the brain, impair learning, deregulate behavior, and play a role in the development of adult pathology. Complex childhood trauma plays a role in the developmental process and often presents as Attention-Deficit/Hyperactivity Disorder. The ways in which these behaviors are treated in childhood often overlooks the root cause perpetuating psychological difficulties later in life. Outside the family, schools and teachers are often the closest care providers a child will experience. It is important that our educational system is trained in detecting childhood trauma disorders and referring children to professionals who can best meet their needs. This review will explore the impact of ACE’s on child attachment, brain development, and affect regulation for the purpose of creating a school-based curriculum that will assist educators in building their skills to work with a wide variety of children from a trauma-informed perspective.
# Trauma and Interventions

## Outline

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Impacts of Adverse Childhood Experiences on Child Attachment, Brain Development, and Affect Regulation: A Teacher’s Guide

Research suggests there is a strong connection between childhood maltreatment and social, emotional, behavioral, and cognitive difficulties in childhood (Glaser, 2000). Current statistics report that as many as 5 million children experience some form of trauma each year, 2 million of which is physical or sexual in nature (Fields, Knopf, Swick, & Williams, 2013). Continued severe stress in childhood produces long lasting changes in brain functioning that impact attachment relationships and cognitive development (Guenette, Kitchenshm, & O’Neil, 2010). These adverse childhood experiences (ACE’s) impact neurobiological development of the hippocampus, amygdala, frontal cortex, and limbic structures believed to mediate anxiety and mood dysregulation (Anda, Felitti, Bremer, Walker, Whitfield, Perry, Dube, & Giles, 2006). As a result, children exposed to ACE’s may display multiple complex symptoms that lack a proper clinical diagnosis (de Mesquita & Gilliam, 1994). This research is imperative for teachers as they are often involved in the initial detection of children who display behavioral difficulties (Packiam-Alloway, Gathercole, Holmes, Place, Elliott, & Hilton, 2009). Viewing these behaviors from a developmental trauma perspective may reduce improper diagnosis and lead to correct treatment planning (de Mesquita & Gilliam, 1994). When caregivers are able to recognize how ACE’s play a role in brain functioning which impacts behavior development, children are better able to receive the care they need in supportive environments.

Adverse Childhood Experiences

The Adverse Childhood Experiences (ACE’s) study, was developed in San Diego at the Centers for Disease Control and Prevention (Dube, Felitti, Dong, Chapman, Giles, & Anda, 2003). The purpose of the ACE is to “assess the impact of numerous, interrelated ACE’s on a wide variety of health behaviors and outcomes” (Dube et al., 2003, p. 565). The ACE’s assessment covers 10 areas: emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, battered mother, household substance abuse, mental illness in the household, parental separation or divorce, and criminal household member (Shewokis & Waite, 2012). Current research shows a positive relationship exists between the number of
ACE’s one experiences, and health problems such as teen pregnancy, attempted suicide, alcohol problems, insufficient sleep, anxiety, mental distress, and nicotine use (Chapman, Croft, Edwards, Liu, Perry, Presley-Cantrell, & Wheaton, 2013).

To verify this research, Afifi, Enns, Cox, Asmundson, Stein, and Sareen (2008) collected data from the US National Comorbidity Survey Replication and measured the prevalence of reported psychiatric disorders and suicide ideation to having experienced any ACE. 5,692 individuals age 18 and older were assessed. As a result of experiencing any ACE’s, women scored higher than men on measures that included mood disorder, anxiety, and psychiatric disorders. When an individual reported a history of experiencing an ACE, the scores for suicide ideation and suicide attempts rose (Afifi et al., 2008). Sexual abuse was found to be the highest risk factor for suicide attempts and non-suicidal self-injury in girls and sexual abuse more than doubled the risk of suicide attempt (Isohookana, Riala, Hakko, & Rasanen, 2012). Alternate research shows that when an individual is exposed to just 1 ACE, the probability of exposure to others greatly increases (Dube et al., 2003).

Bernstein, Rothman, and Strunin (2010) report that ACE’s predisposes youth to early drinking. To test their hypothesis that ACE’s are correlated to underage drinking, Bernstein et al., (2010) conducted a research study of 22 individuals who visited the local emergency department. All participants were between the ages of 18-21 and had reported consuming alcohol before the age of 18. Fourteen of the twenty-two participants reported experiencing physical and/or sexual abuse, and four reported witnessing domestic violence (Bernstein et al., 2010). Individuals reported feelings of loneliness, sadness, and being put into adult roles at an early age for reasons of use. Almost the entire survey population stated that the primary reason for drinking was to reduce tension and cope with problems, “daily and heavy drinking was most often a strategy for coping with trauma, stress, and challenging family situations” (Bernstein et al., 2010, p. 2287).

**Adverse Childhood Experiences & The Stress Response System**

When children experience mental distress as a result of ACE’s, areas of the brain responsible for affect regulation are not able to properly develop. “Chronic and severe stress can alter our brain structure,
negatively impact our cognitive functioning, reduce our physical well-being, and disarm us in relation to social and emotional functioning” (Fields, et al., 2013, p. 182). If trauma becomes persistent, the body and brain normalize around trauma causing brain cell and physical growth to slow and suppress the ability to build self-regulation skills (Guenette et al., 2010). Self-regulation requires development of the frontal cortex of the brain. Trauma prevents the development of neuropathways that enable a child to access this region which is responsible for awareness, emotional intelligence, emotional attunement, social cognition, and interpersonal competence (Guenette et al., 2010). Common indicators of severe stress include responding to life events with fear, hypervigilance, hyper-arousal, dissociation, and a distorted self-other relational pattern (Fields et al., 2013).

Traumatized children have a heightened response to threat which activates the stress-response chemical, cortisol (Guenette et al., 2010). Cortisol is a adrenal hormone essential to the maintenance of homeostasis (Carpenter, Geracioti, Price, Shattuck, & Tyrka, 2011). Cortisol influences and regulates many of the changes that occur in the body in response to stress. Carpenter et al., (2011) states “both increased and decreased cortisol response have been linked to maltreatment during critical times of brain development in childhood” (p. 368).

To test the hypothesis that childhood maltreatment is associated with cortisol levels in response to stress, Carpenter et al., (2011) gathered research from 110 women ages 18-61. Participants were recruited from the community and were assessed utilizing the 28 item Childhood Trauma Questionnaire. Responses were collected and women reporting no or minimal childhood trauma were considered the control group. All subjects were put through laboratory stressors involving public speaking, role playing, and arithmetic. Participants were told that the observers were confederate judges ranking their responses. Saliva samples were collected before and after each test to measure cortisol levels (Carpenter et al., 2011).

Results found cortisol levels were significantly lower with individuals who reported a history of childhood physical abuse and emotional neglect, and significantly higher when an individual reported a history of sexual abuse (Carpenter et al., 2011). Lower levels of cortisol have been known to increase symptoms of depression, lower blood pressure, impact fatigue, and create gastrointestinal problems as
well as cause and maintain reproductive issues. High levels have been found to weaken one’s immune system, destroy healthy muscle and bone, and interfere with metabolism (Carpenter et al., 2011).

**Adverse Childhood Experiences & Brain Development**

Memory and emotional recall is stored in the midbrain area known as the limbic system. This area of the brain includes the amygdala (Painter & Scannapieco, 2013). The amygdala is responsible for storing emotional memory. When activated by stress, emotional functioning is impaired as a result of the fearful memories that are stored. This leads to the association of old trauma memories with current stressors (Painter & Scannapieco, 2013). When trauma responses are activated, intense distress can occur and often presents as difficulty concentrating, disturbed sleep, irritability, anger outbursts, diminished interest in activities, blunted affect, exaggerated startle response, listlessness, dissociation, and detachment (Painter & Scannapieco, 2013).

Cortisol is an important hormone within the limbic system because it works to stimulate the release of the neuro-transmitter GABA which works to “hyperpolarize synaptic membranes, rendering them less likely to conduct electrochemical stress impulses serving to make the body less responsive to stress cues (Geroski & Kindsvatter, 2014, p. 473). When this system is overused as a result of repetitive stress, it becomes weakened and turns maladaptive preventing individuals from being able to stabilize themselves and gain access to self-regulation skills located in the frontal cortex (Geroski & Kindsvatter, 2014). This dysregulation as a result of ACE’s impacts many mood and anxiety symptoms including: panic, depression, and intrusive thoughts (Geroski & Kindsvatter, 2014). Other factors that may lead to the dysregulation of the stress-response system include being raised by a maternal figure who displays continued distress and/or being raised in a home with caregivers who exhibit dysfunctional parenting and incongruent and inconsistent child attunement (Glaser, 2000).

**Attachment Relations & The Trauma Brain**

John Bowlby’s Theory of Attachment draws from the perspective that responsiveness of the caregiver to the child helps children construct their inner working model of self (Glaser, 2000). “Attachment plays a vital role in formation of brain structures and organization of the nervous system,
language development, attaining full intellectual potential, acquiring a conscience, and increasing competency” (Fitton, 2012, p. 123). Fitton (2012) explains that attachment is developed through six components: affective, behavioral, cognitive, kinesthetic/tactile, psychic, and physical security component. All six components are essential to building a secure attachment between child and caregiver since “attachment relationships teach individuals how to be in relationship with significant others and influence all subsequent relationship through to adulthood” (Fitton, 2012, p. 124).

Attachment operates to promote child and personality development and to offer a secure base to safely explore the world (Fitton, 2012). Children build coping skills to respond to stress as a direct result to the responses they receive from caregivers while under stress (Glaser, 2000). Dysfunctional parenting plays a role in creating and maintaining traumatic events (Bailey, Webster, Baker, & Kavanagh, 2012). Neglected children are not taught important life skills and may feel abandonment, judgment, and rejection. This may result in development or susceptibility of PTSD, depression, anxiety, and alcohol use in adulthood (Bailey et al., 2012).

Research suggests disorganized attachment in infancy is related to the state of mind, and/or unresolved loss or trauma experienced by the caregiver (Green, Peters, & Stanley, 2007). Infancy and child attachment disorganization has been associated with atypical parenting including emotional incongruity, high intrusiveness, inconsistent child rearing patterns, and displaying aggressive behavior towards the child (Green et al., 2007). To build on this, Green et al., (2007) created a study to investigate the relationship of the child attachment pattern to psychopathology and atypical emotional expression (EE) parenting behaviors. High EE parents were described as having inappropriate expectations of their child’s ability and expressing intense anger or distrust towards them. Low EE parents were described as being able to combine empathy with tolerance of behavior, utilize non-intrusive and dispassionate language during arguments, and the ability to disengage from negative interactions.

Parent reported data was collected from the primary caregiver of 61 children with a diagnosis of Oppositional Defiant Disorder or Conduct Disorder. Researchers measured child symptomatology, ADHD status, child attachment representation, depressed mood, and atypical parenting behaviors. Results
showed that 25% of parents endorsed symptoms of low EE, 52% medium EE, and 23% high EE. 66% of children with disorganized attachment behaviors had mothers who scored high on EE measures. Low maternal EE was associated with less severe child symptomatology and greater child attachment organization (Green et al., 2007).

When an infant or child feels frightened or threatened, they cry out. The caregiver’s response to this need for security and safety builds the infant/child’s ability to self-regulate and return to a tolerable emotional state (Glaser, 2000). The attunement to the child builds the child’s belief of the world and how they will be treated and cared for by others (Glaser, 2000). This builds a sense of self within the child that impacts cognitive social functioning and creates an internal narrative (Green et al., 2007). Attachment styles have the potential to impact all future attachment based interpersonal family, friend, and love relationships. For this reason, it is important that attachment to caregivers is given priority during infancy and childhood as it is the formation for which the style of all future relationships is based (Fitton, 2012).

**Trauma Behavior Profile**

A history of experiencing ACE’s in combination with insecure attachment, is correlated with the inability to develop neuropathways that allow an individual to access their frontal cortex, the area of the brain responsible for thought processing, rationality, and impulse control (Painter & Scannapieco, 2013). Teachers observe these children as hyperactive, aggressive, depressed, and restless and are often referred to clinics and diagnosed with ADHD, anxiety, and/or mood disorders that do not target the root of the trauma (Guenette et al., 2010).

ADHD is “a developmental and neurobiological condition defined by the presence of severe and pervasive symptoms of inattention, hyperactivity, and impulsivity” (Birchwood & Daly, 2010, p. 455). The worldwide prevalence of ADHD is estimated to be around 5% of the current population (Packiam-Alloway et al., 2009). Individuals with ADHD often have a difficult time taking turns, talk excessively, appear to not be listening when spoken to, and interrupt others (Birchwood & Daly, 2010). “A DSM-IV diagnosis of ADHD focuses on the behavioral problems of inattention, hyperactivity, and impulsivity, but
does not explain the cognitive impairments that are commonly experienced by ADHD individuals” (Birchwood & Daly, 2010, p. 458).

In recent research, neurocognitive and environmental factors have been related to ADHD and early childhood attachment (Escobar, Ijzendoorn, Jugger, Muntean, Pierrehumbert, Roskam, Santelices, Stievenart & Tessier, 2013). The presence of ADHD in children has been linked to negative parent-child interactions suggesting it shares a correlation to attachment relations and ACE’s. “ADHD has been found to be more common among children reared in families experiencing adversity such as marital discord, low socioeconomic status, large family size, parental criminality, and mental disorder” (Escobar et al., 2013, p. 143).

ADHD is often found to share symptoms that coexist with other childhood disorders such as anxiety disorders, conduct disorders, and depressive disorders (de Mesquita & Gilliam, 1994). Research shows that ADHD is a highly cormorbid disorder. Between 30-50% of children diagnosed with ADHD also have a diagnosis of Oppositional Defiant Disorder and/or Conduct Disorder, 20-30% have diagnosed anxiety, and 20-30% have a diagnosed learning disorder (Birchwood & Daly, 2010). The presence of comorbidity is common among children exposed to trauma and may result in disorder and symptom overlap leading to inappropriate behavioral therapies or treatments (de Mesquita & Gilliam, 1994). The ultimate goal is problem identification to move towards effective treatment rather than labeling for the purpose of categorization (de Mesquita & Gilliam, 1994).

A diagnosis of ADHD requires that a child receive a comprehensive assessment that is not based solely on the presence of symptoms such as inattention, hyperactivity, and impulsivity, but also on the child’s behavioral, emotional, and social functioning (American Academy of Pediatrics, 2011). This article also reports that an ADHD assessment should consist of the following: parent and child interviews, parent and teacher completed behavioral rating scales, parent self-report measures, clinical based psychological tests, standard neurodevelopment screening to rule-out other medical conditions, intelligence testing or screening for learning disabilities, and vision, language, and hearing screenings. Receiving a proper ADHD screening and diagnosis leads to greater probability that problem identification
is accurate. This leads to the development of treatment options which can be formatted to fit the needs of
the child (American Academy of Pediatrics, 2011). If the child does not fit the criteria for ADHD, it is
suggested that alternate problems may be present. Being well-informed about the impacts of trauma on
child development and learning allows caregivers to make proper referrals to professionals who can meet
the needs of children who do not fit the category of ADHD (Birchwood & Daly, 2010).

**Developmental & Complex Trauma**

Due to overlapping behavioral symptoms, adults and children are being diagnosed comorbidly
and treated as if all diagnosis are occurring independently of others (Van der Kolk, 2005). When disorders
are separated and treated individually, often the root of the problem is overlooked. A new framework has
been developed that allows caregivers to work with children who have experienced complex interpersonal
trauma’s and attachment difficulties.

Developmental Trauma Disorder (DTD) refers to a type of “stressful event that occurs repeatedly
and cumulatively, usually over a distinct period of time, and within specific relationships and contexts”
(Sar, 2011, p. 5623). DTD often originates within the caregiving environment in which the child is raised.
Research shows that 80% of ACE’s are perpetrated by the child’s own parents (Van der Kolk, 2005).
These “complex traumas” can have a large impact on all areas of functioning and have been correlated to
experiencing multiple mental and physical health conditions (Lawson & Quinn, 2013, p. 497). Lawson
and Quinn (2013) state there are 7 main areas of complex trauma impairment: attachment, biology, affect
regulation, dissociation, behavioral control, cognition, and self-concept.

When children of emotionally neglectful caregivers grow up learning they cannot rely on others
to help them, they learn to resort to maladaptive coping behaviors (Van der Kolk, 2005). Common
characteristics that may suggest DTD include behaviorally reenacting traumas through aggressive
manners, fearful, enraged, or avoidant emotional reactions to minor stimuli, anticipation of future
traumas, and a confused or disoriented presentation (Van der Kolk, 2005). These behaviors impact
interpersonal relationships and can result in clinging, compliant, defiant, and distrustful behavior aimed
towards caretakers (Van der Kolk, 2005).
Vandenberg & Wamser-Nanney (2013) label these difficulties as Disorders of Extreme Stress NOS (DESNOS). DESNOS describes the pathology resulting from complex trauma exposure that leads to DTD. DESNOS symptoms resulting from early childhood traumas include: alterations in self-perceptions, feelings of ineffectiveness, feeling permanently damaged, excessive guilt, responsibility, and shame (Vandenberg & Wamser-Nanney, 2013).

To investigate whether DESNOS symptoms were related to forms of trauma (interpersonal and non-interpersonal), Vandenberg and Wamser-Nanney (2013) measured 346 children with a trauma history whose parent/guardian answered a child behavior checklist and trauma symptom checklist assessment. Results showed that children exposed to interpersonal trauma (physical, sexual, emotional abuse, and/or domestic violence) showed higher levels of DESNOS symptoms when compared to children exposed to non-interpersonal trauma (natural disaster, death, serious injury or illness). These results show that interpersonal complex trauma disrupts children’s ability to build developmental skills required for self-regulation (Vandenberg & Wamser-Nanney, 2013).

Currently, the DSM-5 diagnosis of PTSD is the only disorder that addresses these symptoms of complex and developmental trauma, “commonly used diagnosis and treatment modalities may lack the integrated theoretical and technical angle of view necessary to free the patient from the trap he or she is stuck and to assist him or her in moving forward” (Sar, 2011, p. 5669). As a result of this and the current research showing how trauma impacts development, interpersonal relationships, and executive functioning, Sar (2011) believes it is important to create a trauma-related disorders section that would add insight on the “interrelated and overlapping consequences of trauma…successful revision will not only improve research criteria, but also assist clinicians in psychotherapeutic work subsequent to accurate diagnosis” (p. 5662).

**Evidence Based Trauma Interventions**

Many DSM symptoms and diagnosis’s share common behavioral profiles. For children who exhibit behavioral difficulties in home and learning environments, ADHD is often the most common label and diagnosis. Guenette and Kitchenham (2010) state, “These children and adolescents are often
diagnosed with ADHD and anxiety or mood disorders that target specific disorders but not the etiology of complex trauma, resulting in missing information in the development of treatment” (p. 193).

Many trauma specific evidence based treatments have been developed and proven helpful for individuals within this target population. Trauma Focused Cognitive Behavior Therapy (TF-CBT) has proven to yield the most effective results when working with children and families who have experienced trauma (Fields et al., 2013). Lawson and Quinn (2013) report “TF-CBT has the strongest empirical evidence of any other treatment model in successfully addressing these symptoms…” (p. 504). TF-CBT has been tested in several controlled trials specifically for sexually abused children and children who have been exposed to multiple traumas. All trial results show that receiving TF-CBT reduces symptoms of PTSD, anxiety, depression, and other emotional and behavioral difficulties (Cohen & Mannarino, 2008).

TF-CBT is based on the acronym PRACTICE: psychoeducation for parent and child, relaxation skills, affective modulation, cognitive coping and processing, trauma narrative, in-vivo master of trauma reminders, conjoint child-parent sessions, & enhancing future safety and development. TF-CBT consists of six core values: 1) it is not rigidly designed, 2) respect, 3) adaptability, 4) family involvement, 5) the therapeutic relationship, and 6) self-efficacy (Little, Akin-Little, & Gutierrez, 2009). The goal of TF-CBT is to resolve the effects of a trauma experience and reduce trauma related symptoms (Lawson & Quinn, 2013). One important component when working through the framework of TF-CBT is to determine whether the trauma symptoms are the primary cause for concern or if other psychiatric pre-existing conditions are present that would interfere with treatment (Cohen & Mannarino, 2008). When it has been determined that an individual would benefit from TF-CBT, treatment can move forward.

The primary component in TF-CBT that research shows promotes the most healing is the creation of the child’s trauma narrative (Cohen & Mannarino, 2008). Cohen and Mannarino (2008) state that the reasons for creating the trauma narrative include: 1) overcoming avoidance of traumatic memories, 2) identifying cognitive distortions through the child’s telling of the story, and 3) contextualizing the child’s traumatic experience into the larger framework of the child’s whole life. “The therapist assists the child in cognitively processing any distortions that are contributing to negative affective states…” (Cohen &
Furthermore, conjoint child-parent sessions help the family build on their ability to communicate about the traumatic event and provide reassurance and support to the child (Cohen & Mannarino, 2008).

Dyadic Developmental Psychotherapy is another evidence based trauma intervention that has been proven to yield positive results when working with this population. Becker-Weidman (2006) states, “the child’s developing capacity to regulate emotions and develop a coherent sense of self requires sensitive and responsive parenting” (p. 149). Becker-Weidman (2006) reports parent support is important as well as addressing the caregiver’s own issues as it often relates to power struggles and dynamics that perpetuate the behavior of the child.

DDP requires the clinician to be attuned to the child and develop a meaningful emotional connection. “By co-regulating the child’s emerging affective states and developing secondary representations of thoughts and feelings, the child’s capacity to affectively engage in a trusting relationship is enhanced” (Becker-Weidman, 2006, p. 156). The DDP treatment models healthy attachment, reduces shame, provides safe nurturing, acceptance, appropriate eye contact, and proper tone of voice. DDP uses the acronyms PACE (playful, accepting, curious, and empathic) and PLACE (playful, loving, acceptance, curious, and empathic) (Becker-Weidman, 2006).

When working from the DDP framework, the therapist works closely with both caregiver(s) and child. First behavior is identified and explored and the meaning to the child’s behavior begins to emerge. Empathy is used to reduce the child’s sense of shame as the therapist works to help normalize the behavior. The child should then begin to communicate understanding of the behavior to the caregiver(s) and a new meaning for the behavior is found and a positive narrative is created (Becker-Weidman, 2006).

To determine the effectiveness of DDP, Becker-Weidman (2006) studied 64 individuals who had a trauma-attachment disorder diagnosis, had experienced past histories of serious maltreatment, and who met DSM-IV criteria for Reactive Attachment Disorder. 34 Individuals received treatment using the DDP model while 30 individuals in the control group were provided with an evaluation and basic talk therapy. Subjects were between 5-16 years of age and symptoms were measured from the Child Behavior...
Checklist and the Randolph Attachment Disorder Questionnaire. Results showed that post treatment, those who received DDP scored significantly lower on all measured behaviors that included: withdrawn, anxious/depressed, social problems, thought problems, attention problems, rule-breaking, and aggressive behavior. For those who received evaluation and talk therapy, scores did not empirically fluctuate (Becker-Weidman, 2006). These results indicate that DDP is an appropriate and helpful evidence based therapy to utilize when working with children who have experienced trauma.

**Teacher, School, & Student Goodness-Of-Fit**

It is important for teachers to be informed and educated regarding trauma, development, memory functioning, and behavior profiles as they are often the adults who work closest with these children (Packiam-Alloway et al., 2009). Children who are labeled or misdiagnosed as a result of behavioral difficulties often suffer long-term due to the diagnosis’s impact on one’s education plan. A recent study of adults who were diagnosed with ADHD as children found that only 12% completed a bachelor’s degree or higher and only 1% completed a postgraduate degree (Birchwood & Daly, 2010).

To determine whether children with ADHD and those with working memory impairments have a common classroom behavioral profile, Packiam-Alloway et al. (2009) created a study utilizing teacher reported behavioral checklists of students. Results of the teacher assessments indicated that behavioral problems in the classroom are characterized by different attention profiles. Children with ADHD were identified as exhibiting oppositional and hyperactive behavior while those with working memory problems displayed inattentiveness. Traits of over-activity and impulsivity were present, however less so among students with working memory deficits and no ADHD diagnosis (Packiam-Alloway et al., 2009). Though similar traits were identified, teachers rated students with no ADHD as “highly inattentive with poor attention spans and high levels of distractibility” (Packiam-Alloway et al., 2009, p. 355).

Because these children often present with attachment disruptions that impact the student-teacher and student-peer relationship, these children often expect poor outcomes. It is important for the teacher to build a safe trusting environment where a positive relationship with the teacher can grow (Guenette & Kitchenham, 2010). Greene (1995) discusses the importance of compatibility between student and teacher
through the lens of Goodness-Of-Fit systems theory. Greene’s model emphasizes the fact that the sole responsibility of student behavior does not lie primarily with the student, but with the supportive or non-supportive environment the student experiences (Green, 1995).

Teacher objectivity ratings of ADHD behavior are often compromised by their emotional state at the time of the rating. As a result, the ratings of behavior may become subjective and more about the teacher, than of the child (Greene, 1995). The Goodness-Of-Fit model is a productive way to conceptualize how student behaviors may appear different to multiple caregivers. Greene (1995) states, “the difficulties of students with emotional behavior problems are often due in part to incompatibilities between pupils and teachers that mismatches their behavioral styles, perceptions, or expectations” (p. 87).

Recognizing that students are not 100% to blame for behavior related difficulties helps reduce stigma and internalized shame that children often take on. When adults in position of power and care are able to recognize how they impact the child’s behavior as a result of their personal interpretations and reactions, children are better able to receive the care they need with a proper objective viewpoint (Greene, 1995).

**Teacher & School Strategies**

When working with children who have experienced chronic stress and/or trauma, it is important to recognize these children may be different than those who have experienced little to none (Fields et a., 2013). Fields (2013) states there are 3 strategies that have a positive influence on children living in stress: trust, attachment relations, and a consistent nurturing environment where attunement, reciprocity, and affective reflection are provided (Fields et al., 2013).

Carbone (2001) suggests there are many things teachers can do to help students with their behavioral deficiencies that are strengths-based and do not “exacerbate their problems” (p. 72). General strategies include: incorporating movement, reinforcing positive peer attention, frequent teacher monitoring and seat-selection, and placement near the teacher and away from distracting classroom areas (Carbone, 2001). For over-stimulated or aggressive children it is important to designate a quiet area that the child can go to complete their tasks. For under-stimulated children, consistently allow for a space and
time to jump around and let off steam (Carbone, 2001). To deal with impulsivity Carbone (2001) reports that positive reinforcement rather than time-outs have proven to be more successful.

To enhance students learning Birchwood and Daly (2010) describe many academic interventions that are helpful for those with behavior difficulties. These include: peer tutoring, adjusting to the child’s learning style, self-monitoring techniques, strategy training, homework focused interventions, and providing teachers with psychoeducation regarding complex and developmental trauma behavior and treatment (Birchwood & Daly, 2010). For those who struggle with inattention and distractibility, creating tasks such as games, role-playing, and showing educational videos provide the stimulation necessary for children to remain focused (Carbone, 2001). Allowing students to pick their homework or classroom assignments from a list of choices promotes participation and encouragement by allowing the child to feel in control. For those who struggle with disorganization, Carbone (2001) suggest creating predictable locations for classroom materials and creating color coded folders, bins, or notebooks to help with organization.

As a result of the damage to the body and brain that ACE’s can incur, it is important to apply early interventions that are necessary to counter the effects of trauma. Garret (2014) reports that schools can help by: 1) recognizing the impact that exposure to chronic stress and trauma has on kids and their ability to learn, 2) incorporate stress reduction techniques like yoga, quiet time, and breathing exercises, and 3) create discipline policies that do not involve kicking kids out of school. When teachers and schools have the proper psychoeducation, intervention techniques, and are able to recognize how outside factors impact the learning environment, they are better able to provide adequate interpretations of complex behavior that reduces stigmatization and promotes growth. Furthermore, informed teachers are better able to properly refer students and parents to professionals who are qualified to meet the specific needs of the child.

**Adlerian Perspective**

Alfred Adler’s approach of Individual Psychology views thought, feeling, and behavior from a systemic perspective (Carlson, Maniacci, & Watts, 2008). Adler believed human behavior is socially
embedded, “We are born into social groups called families” (Carlson et al., 2008, p. 11). Interactions develop among family members that assist in forming the personality and self-concept. According to Ansbacher and Ansbacher (1956), the mother is the first bridge to forming a social life and represents “the greatest experience of love and fellowship the child will ever have” (p. 372).

Children seek nurturance, care, and proximity to feel a sense of belonging, “humans need security, which is provided through love, touch, and warmth” (Weber, 2003, p. 247). Through this relationship, an individual’s private logic and world-view are created (Carlson et al., 2008). If a child is neglected or pampered he/she will not build the capacity for love and understanding (Ansbacher & Ansbacher, 1956). The neglected child is raised to believe that society is cold and is often untrusting of self and others. Behaviors resulting from neglect include: discouragement, hesitation, oversensitivity, exaggerated emotion, and physical and psychological disturbances, all of which can lead to a lack of social interest (Ansbacher & Ansbacher, 1956).

Adlerian’s identify the formation of social life through one’s ability to develop a level of social interest. “Having social interest means feeling like part of a family, a group, a couple, and the human community…It means to participate, to contribute, to share; to feel accepted, appreciated, and loved, as well as to accept, appreciate, and love other people” (Oberst & Stewart, 2003, p. 17). Adlerian counselors believe that social interest is the backbone for teaching and promoting healing responses that meet the needs of an individual navigating through a stress response pattern (McCarthy & Tortorice, 2005). McCarthy and Tortorice (2005) share that social interest is created and maintained through the tasks of life: work, love, and friendship. These tasks promote the importance of interconnectedness with others: family bonds, community, religion, education, and global events. Social interest is a “prerequisite for psychological adjustment and well-being” as it reinforces cooperation and reduces feelings of hostility, threat, and conflict (McCarthy & Tortorice, 2005, p. 306). When the development of social interest is disrupted as a result of trauma or dysfunctional and maladaptive parenting, the child may struggle with adjusting to the tasks of life that impact future psychological and psychosocial functioning (Weber,
Typically this occurs because the child is not equipped to handle the life tasks and therefore, may have a general feeling of inferiority that originates from neglect and a lack of self-trust and self-esteem.

Teaching others to gain the courage to be imperfect reduces striving for superiority which can impact feelings of aggression, anxiety, and exclusion behaviors (Carlson et al., 2008). “The courage to be imperfect” is considered one of the main interventions of Adlerian counseling as it works towards increasing acceptance of self and others (Oberst & Stewart, 2003, p. 19). Encouragement and insight provided by the counselor helps clients become aware of why they choose to function as they do and helps creates insight of thoughts that lead to maladaptive coping responses (McCarthy & Tortorice, 2005). Adlerian techniques such as catching oneself before self-defeating perceptions lead to inappropriate behavior, is a popular cognitive-behavioral therapy technique used for building self-confidence, self-efficacy, and learning how to respect one’s own judgment (McCarthy & Tortorice, 2005). The holistic approach of Individual Psychology matches the treatment styles necessary for children and adults who have experienced trauma because it provides the flexibility for clinicians to view the individual and their ACEs from a systemic perspective (McCarthy & Tortorice, 2005).

**Individual Psychology & Attachment Theory**

Individual Psychology and Attachment Theory share basic components that include: innate interactions with caregivers, goal corrected behaviors that changes with the environment, the social life creates security and happiness, children seek nurturance and care, and proximity seeking behaviors are displayed to feel a sense of belonging (Weber, 2003). For those who experienced an insecure parent/child attachment relationship, familiar feelings of love, loss, and abandonment occur (Weber, 2003). “Psychological and emotional disturbances may result from the threatened or actual disruption of attachment. This disruption/loss, unresponsiveness, or unpredictability of an attachment figure may produce anger, depression, anxiety, and sadness” (Weber, 2003, p. 248). A child’s relationship with an attachment figure promotes social skills that encourage and foster social interest.

Both theories maintain that private logic and concept of self and others, are formulated through early life interpersonal interactions. Family of origin experiences influence a child’s development and is
often the cause of emotional disturbances and feelings of discouragement (Weber, 2003). Attachment Theory and Individual Psychology view the therapeutic relationship as a way for individuals to use the therapist as a secure base to explore relationships. With this, individuals are able to gain insight of their attachment and lifestyle histories in a way that evokes awareness of mistaken beliefs about the world (Weber, 2003).

**Adlerian Democratic Education**

An educators main task is to see that no child is discouraged at school and if so, to help the child regain self-confidence (Ansbacher & Ansbacher, 1956). “The school is placed between the family and life in society. It has the opportunity of correcting the mistaken styles of life formed under family upbringing and, the responsibility of preparing the child’s adjustment to social life so that he will play his individual role harmoniously in the orchestral pattern of society” (Ansbacher & Ansbacher, 1956, p. 399).

The classroom is designed to create a community of social interest and social atmosphere (Ansbacher & Ansbacher, 1956). Creating a democratic education helps with instilling a co-participation dialogue that fosters the growth of social interest (Oberst & Stewart, 2003). Within this framework, students are able to take responsibility for their own learning progress which enables teachers to: 1) take action instead of lecturing and preaching, 2) provide encouragement, 3) use natural and logical consequences instead of punishment, and 4) avoid critical situations (Oberst & Stewart, 2003).

Trauma induced neurological and neuropsychological dysfunctions of the child can increase the frustration tolerance of the adult. Therefore, when working with children, caregivers must be able to observe their own emotional reactions in order to apply behavior interventions that benefit the child (Oberst & Stewart, 2003). It is important for teachers to approach students on an individual basis and guide the student in ways that fit their needs through this democratic education process.

**Experiential Project Overview**

For the project portion of this paper, I have created a school based curriculum appropriate for use in grades 1-6 that highlights different areas of trauma-informed care and builds classroom intervention skills. Because teachers are often the closest adults outside of the family system that work with children,
it is imperative that they be up-to-date on current research. The curriculum is intended to be presented to school counselors with the hopes of school counselors implementing the training and education into their work with teachers. My goal is to help teachers gain knowledge of trauma-induced behaviors vs. children with a clinically diagnosed case of ADHD. Too many children with behavior challenges are being categorized as ADHD without receiving a proper comprehensive exam and are not receiving the appropriate interventions needed. Creating this curriculum was the highlight of my time spent at Adler because it allowed me the opportunity to put my efforts into a topic that I feel passionately about.

The curriculum is broken down into 3 main components: psychoeducation, experiential activities, and classroom discussion. The curriculum is arranged so that all components flow together to create maximum learning. The psychoeducation piece of my curriculum will be presented via power point presentation with the incorporation of YouTube videos and slides for the purpose of providing accurate research based information regarding ACE’s, attachment, neurocognitive development, and classroom interventions. Because this curriculum is intended to be presented to professionals who may not have extensive knowledge of the topic, it will be delivered in an introductory format.

The experiential activities which include the case of Katie and alternate case vignette studies, are designed to help the learner apply classroom based interventions and techniques. For the case of Katie, learners will watch a 9 minute YouTube video and break into small groups to discuss what they noticed about Katie in relation to the previous research presented. This is done so that learners can apply psychoeducation material with behavior observations. The class will then come together and share what they observed for the purpose of: 1) recognizing behavior traits and characteristics of trauma, and 2) recognizing how appropriate interventions can help children succeed.

Next, the curriculum is designed to provide the learner with tools and techniques that have been proven to help de-escalate children who display challenging behavior for the purpose of creating a safe classroom learning environment. After this material has been introduced, 3 case vignettes will be presented. Participants will break into groups of three to discuss one case and create individualized interventions that could range from providing parent recommendations, to classroom and learning style
modifications. Each group will share their strategy and provide examples of why they chose each intervention based on what they have learned throughout the curriculum.

The curriculum will conclude with a Q & A format designed to answer any final questions about concepts learners have acquired. Alternate educational trauma-based resources will be shared for the purpose of continued learning if the participant so desires. Participants will be asked to anonymously answer a short series of questions regarding the strengths and weaknesses of the curriculum so that moving forward the curriculum can be formulated to best meet the needs of the learners.

**Summary**

Many children exposed to ACE’s struggle with interpersonal attachment relations, affect regulation, communication, and classroom learning. If left untreated, these problems may result in long-term learning delays and adulthood psychological and social difficulties. Schools and teachers can better impact a child’s learning environment when they are properly informed about current research in regards to how ACE’s impact levels of functioning. The more informed educators are in regards to the manifestation of complex and developmental trauma, the more qualified they are to refer children to proper resources that will address specific needs.

Throughout this literate review, it has been shown that Adverse Childhood Experiences impact a wide range of developmental and behavioral functions. There is a direct correlation between trauma, attachment relations, and levels of childhood psychosocial development and functioning. When children are brought up in unsupportive or abusive environments, they are unable to develop healthy coping skills that build awareness, adaptability, and flexibility. These skills are necessary for social, psychological, and emotional growth and learning. As a result, proper clinical diagnosis and early interventions are needed in order to help children build skills for success.

**Discussion and Conclusions**

This literature review determined that Adverse Childhood Experiences impacts many level of a child’s functioning. This review shows that when caregivers are trauma-informed, they may better meet
the needs of children who have been exposed to multiple layers of adversity. As more research is compiled, it is valuable to share this information with those who may have direct contact with children who display developmental trauma disorder symptoms for the purpose of helping children receive proper care. Trauma as it relates to psychosocial functioning, specifically how educators can be the first providers towards intervention, should be a topic that more researchers address. The more informed individuals who work with children are, the better able they will be to help meet children’s needs in a way that promotes life-long learning and success.

**Future Direction**

Current research on neurocognitive development is growing at a rapid pace. New techniques and theories regarding the treatment of trauma are expected to grow now that researchers have discovered that adult brains are capable of neuro-plasticity. Being trauma-informed is more than just recognizing that an individual has experienced trauma and providing encouragement and compassion. Being trauma-informed requires that professionals are properly informed on current research regarding the brain and child development along with an understanding of how this impacts behavior. It means providing adequate care on an individual case-by-case basis. This is equally important for therapists as it is for teachers to understand and acknowledge.

To continue building a school-based curriculum regarding how trauma impacts brain development and classroom learning, it is imperative that professionals remain informed of new research and developments in the field. Creating the ultimate teachers guide to trauma-informed care will require that I share my research with educators and consistently update my curriculum in response to the feedback acquired. One piece of the curriculum that I would like to add to in the future is a section on teacher self-care and self-awareness. This portion would be helpful since so much about how behavior develops is related to how we interact with, and respond to verbal and non-verbal cues from those we are engaging with. When we are better able to understand our own internal-working order in relation to others, we are best able to provide care with a proper subjective viewpoint.
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