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# The Impact of Trauma on Young Children/The Effect of Animal-Assisted Intervention on Young Children with Trauma

Michele M. Pettit

St. Cloud State University, [pemi1001@stcloudstate.edu](mailto:pemi1001@stcloudstate.edu)

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**The Effect of Animal-Assisted Intervention on Young Children with Trauma**

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Michele M. Pettit

A Starred Paper

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree

Master of Science in

Early Childhood Special Education

March, 2019

Starred Paper Committee:  
JoAnn Johnson, Chairperson  
Ming-Chi Own  
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## Chapter 1: Introduction

I always wondered why, as an early childhood special education teacher, so many of the children in my teaching experiences had challenges regulating their emotions, seemed to be scared or upset, and could not focus on learning.

As a teacher, I have experienced how children have difficulties in learning because they feel stressed and are emotionally unregulated. Here is an observation of a child struggling with his emotions in a special classroom for children with emotional behavior challenges. On this specific morning, I was teaching a 2<sup>nd</sup> grader, Henry, who was having a very challenging morning in school. Henry was labeled as having emotional behavior disorder (EBD). He shared with me that adults say he has anger management issues, but he wasn't sure what that meant.

Henry arrived back to class early from recess. *Henry entered the room, was howling out grunt noises and began throwing his coat on the floor, repeatedly, as he was spinning in circles, howling even louder. As I quietly approached him, I asked if everything was alright. Henry responded with a definite "No." He would not make eye contact. I then asked him if he needed a little time to cool down on his own. His reply was a loud absorbing "Yes." As I waited calmly, Henry sat down in his chair. I whispered, "Henry, take nice, big, deep breaths." Henry did and began to soothe himself through slow breathing. I asked again, if I could help him, Henry replied, "Yes." Through a conversational exchange, I asked if anything was wrong. He told me he was upset that the other kids at recess don't play with him. He also said his parents are divorced, and his mom and dad and sister don't ever play with him. I asked how he felt about that. He said he was mad! I asked if he had any friends around home? He said his grandmother is his friend. He said she loves him, and she is very nice, but he does not get to see her that often. I asked if there was anything else he wanted to talk about. He then said he has bad*

*dreams and nightmares that scare him, because all he can see in his mind is blood and knives. I was very concerned and asked Henry if he is ok and if anyone is hurting him. Henry said "No." I then asked him what kinds of movies or TV shows he likes to watch or if he played video games. He said he watches a lot of war and ninja movies with his dad. I smiled in relief and explained to Henry that those kinds of shows and movies are scary for a boy to watch and that is most likely why he sees blood and knives in his dreams. I told him those kinds of movies are even scary for me! He laughed for the first time in the half hour and was calmer and could go about his school day.*

Henry was stressed about his family, friendships, and scary thoughts. I think he handled his emotions well, especially when he is just learning to understand them, as he was able to accept my help, waited until he was back, safe in the classroom and away from others. I was honored he trusted me enough to share with me why he was stressed and upset.

So often as an early childhood special education teacher, I experienced instances of children struggling to learn because they were experiencing trauma in their lives. It was hard for me to realize and know that they were having trouble with their lessons and could not handle both. I wanted to research trauma and how children can cope and be able to learn at the same time. It was frustrating for me to see other teachers or paraprofessionals not know how to help children because they did not have training to understand trauma and its symptoms or know how to cope. Just as with Henry, I wanted to learn more about what was happening with his emotions. I wondered how I could help him cope more with his emotions in a positive way, and how could I help him make some friends his own age with whom he could share dreams or aspirations.

In the early years of growth, children are just learning how to regulate their emotions. Goldfinch (2009) reports it is in these early years that adverse experiences, such as trauma, can impact attachment, typical development and the ability to learn. Caregivers are a child's first and primary attachment, critical in helping soothe uncomfortable emotions, especially when they are experiencing the impact of stress, adverse experiences, and trauma.

De Young, Kenardy, and Cobham (2011) state experiencing stress and trauma can make it challenging for young children to achieve developmental milestones, learn, and regulate their emotions as they grow. Trauma can also impact the ability of the brain to be able to benefit from new experiences and continue functional growth patterns. Young children are just learning how to cope with new experiences and feelings and now may have to cope with stress or trauma. Trauma can change the daily lives of children at home and in school. As the negative personal effects of trauma can result in posttraumatic stress disorder (PTSD), they may also become ineffective in their interactions with others.

### **Statement of the Problem**

All too often in my teaching of young children like Henry, the adverse experiences and trauma have resulted in difficulty regulating emotions and coping in their classroom. Their experiences with distressing events or trauma symptoms disrupt their learning. De Young et al. (2011) states trauma affects emotional growth and responses and slows the progression of brain connections. In these circumstances, the impact of stress and trauma on young children, as early as infancy, are often underestimated. Personal trauma and stress place a significant pressure on young children's typical development. This results in an inability to reach developmental milestones, and to accomplish the learning that enables them to reach their full potential. Trauma and PTSD leave a lasting impression impacting both relationships and learning. This research

study will address how trauma impacts children's development in critical growth stages and describes how strategies and interventions can be applied to help them develop coping skills.

### **Research Questions**

1. How does trauma impact young children's development?
2. What strategies and intervention approaches affect how young children cope and heal from trauma?

### **Significance of the Study**

This study will research the impact of trauma on young children and how PTSD symptoms affect emotional regulation, brain growth, and development. It will also provide research on healing and care approaches for young children.

### **Literature Review Approach**

For my literature review, I searched books, internet resources, and peer reviewed articles under St. Cloud State University's online library system. My initial search was through the Child and Family Studies Research Guide and includes children birth to age 5 years, 11 months. My academic research articles were found under EBSCO Host: Academic Premier Search (all topics), ERIC, and PyscINFO. This research is limited to the last ten years. The following educational field titles highlighted my search as follows: *trauma, early childhood, young children, PTSD, interventions, play therapy, animal-assisted therapy, and companion animals*. I chose articles and current resources that focus on the impact of trauma, symptoms, and strategies in healing.

### **Definitions of Terms**

*ACEs*. "Adverse childhood experience's (ACEs) are traumatic experiences in a person's life occurring before the age of 18 that the person remembers as an adult. The nine ACEs are:



physical abuse, sexual abuse, emotional abuse, mental illness of a household member, problematic drinking or alcoholism of a household member, illegal street or prescription drug use by a household member, divorce or separation of a parent, domestic violence towards a parent, and incarceration of a household member” (Minnesota Department of Health [MDH]), 2013, p. 13).

*Amygdala.* A small bulb at the front end of the hippocampus (amygdala means almond in Latin.) There are two, a right and a left. The amygdala plays a role in the formation of emotional memories, especially those around fear and safety, and is functional at birth (Fogel, 2009).

*Anxiety.* Emotional state characterized by worry and apprehension (McDevitt & Ormrod, 2013).

*Attunement.* A concept related to imitation of another person (Fogel, 2009).

*Attachment.* An enduring emotional tie uniting one person to another (McDevitt & Ormrod, 2013).

*Child Maltreatment.* Adverse treatment of a child in the form of neglect, physical abuse, sexual abuse, or emotional abuse (McDevitt & Ormrod, 2013).

*Cognitive Development.* The aspect of development that involves thinking, problem solving, intelligence, and language (Puckett, Black, Wittmer, & Petersen, 2009).

*Critical Period.* A time of physiological and/or psychological sensitivity during which the normal development of a major organ or structural system is vulnerable to insult or injury (Puckett et al., 2009).

*Depression.* Emotional condition characterized by significant sadness, discouragement, hopelessness, and, in children, irritability (McDevitt & Ormrod, 2013).

*Developmental Milestones.* Significant events during the courses of growth and development (Puckett et al., 2009).

*Emotional Regulation.* The ability to control the form and timing of one's emotional expression and feeling state (Fogel, 2009).

*Empathy.* Capacity to experience the same feelings as another person, especially when the feeling is pain or distress (McDevitt & Ormrod, 2013).

*Hippocampus.* A horseshoe-shaped structure in the limbic system that plays an important role in the formation of memories for event and sequences, what is known as autobiographical memory (Fogel, 2009).

*In utero.* The environment in which the fetus grows within the uterus (Puckett et al., 2009).

*Internalization.* In Vygotsky's theory, the gradual evolution of external, social activities into internal, mental activities (McDevitt & Ormrod, 2013).

*Limbic System.* A brain area that is in the very center of the head, between the ears, and includes structures such as the amygdala, the hippocampus, and the pituitary gland. This part of the brain is related to processes; such as attention, states like sleeping, and waking, urinary and bowel control, emotion and responses to stress and trauma, and memory (Fogel, 2009).

*Neural Plasticity.* The ability of the brain and nervous system to seek novelty, learn, and remember by continuing to alter the patterns of connections between neurons (Fogel, 2009).

*Neurobiological/Neuroscience.* The study of the brain and nervous system as it relates to psychological and behavioral functions such as moving, thinking, and feeling (Fogel, 2009).

*Neuroimaging.* The use of different types of radiation to detect electrical and chemical changes in specific regions of the brain; includes PET and fMRI methods (Fogel, 2009).

*Neuron.* Cell that transmits information to other cells; also called a nerve cell (McDevitt & Ormrod, 2013).

*Neurotransmitters.* Neurochemicals, of which there are many varieties such as serotonin and dopamine, signal from one neuron to another, processes such as voluntary reflex movements, state regulation, memory, emotion, and pain (Fogel, 2009).

*Posttraumatic Stress Disorder (PTSD).* The result of prolonged exposure to stress and threat resulting in a decreased ability of the individual to cope with stress (in the prefrontal cortex) in appropriate way, creating people who are more likely to freeze, fight, or flee when they feel threatened (Fogel, 2009).

*Prefrontal Cortex.* Located roughly above the eyes, it forms a link between the limbic system and the cortex and therefore plays an important role in how the infant learns to regulate states and emotions (Fogel, 2009).

*Psychological State.* Pertains to conditions of arousal or alertness in infancy (Puckett et al., 2009).

*Sense of Self.* Knowledge, beliefs, judgements, and feelings about oneself as a person (McDevitt & Ormrod, 2013).

*Sensory Processing.* The brain's perception of and response to sensory input (Buron & Wolfberg, 2008).

*Social-Emotional Development.* Systematic changes in emotions, self-concept, motivation, social relationships, and moral reasoning and behavior (McDevitt & Ormrod, 2013).

*Symbolic Play.* Play acts directed by the child toward objects, self, or others to signify events, exploratory play, and/or conventional object use (Buron & Wolfberg, 2008).

*Synapse.* The connection between axons and dendrites by which action potentials are transmitted between neurons (Fogel, 2009).

*Trauma.* A deeply distressing or disturbing experience. According to Kuban (2012), “Any experience that a child perceives as terrifying and feels hopeless and powerless to do anything about in his or her life, safety, or situation” (p. 15).

### **Organization of the Study**

Chapter 1 established understanding of why it is important to research the effects of trauma on children’s development. Terminology used in both research studies followed. Chapter 2 will identify the specific language of trauma and the negative impact it causes to early learning systems, and how caregivers can provide responsive care to children who have experienced trauma, so they may cope, heal and learn. This chapter will also discuss providing appropriate strategies to help children in natural settings gain attachment, learn trust, regulate emotions, engage their senses, and create brain growth. Chapter 3 is a conclusion of the implications and results researched on trauma and PTSD. Chapter 4 is my position statement and future teaching practices.

### **Summary**

Young children can be exposed to stress or traumatic experiences that may result in adverse reactions to their brains and development. Their brains are creating memories and communications to regions of their psychological systems that coordinate skills needed to attach to a significant caregiver, regulate emotions, and gain cognitive abilities and social skills. Adverse stress experiences can change how young children’s systems react and adapt to the people in their surroundings. Understanding trauma and learning positive approaches can help

young children cope with adverse experiences and increase their chances of typical growth and reaching full potential (Swick, Knopf, Williams, & Fields, 2012).

## **Chapter 2: Literature Review**

Young children are vulnerable to abuse and trauma. They are just beginning to develop, have few coping skills, and are more in need of parental or caregiving support than at any other time in their lives (De Young et al., 2011). It is important to understand that the critical period of development and growth for the brain occurs between birth and five years old (McConnico, Boynton-Jarret, Bailey, & Nandi, 2016). According to Goldfinch (2009), “Early trauma can have a profound impact on young children’s emotional, cognitive, and physical function, and on their ongoing development” (p. 284). In a study by Lieberman and Van Horn (2009), they state that early trauma “is a significant issue as infants, toddlers and preschoolers are at particularly high risk of being exposed to potentially traumatic events” (De Young et al., 2011 p. 231). The National Center for Mental Health Promotion and Youth Violence Prevention and The National Child Traumatic Stress Network data propose the prevalence of a traumatic occurrence on young children before the age of 4, is 1 in 4, and represents 26% of American children (McConnico et al., 2016).

### **Purpose Statement**

The purpose of this study is to determine the effects and impact of trauma on the development of young children. This chapter will introduce and review four areas: (a) define trauma and its symptoms, (b) determine the effect of trauma on the brain, (c) determine the impact of trauma on critical development and functioning in learning and home settings, and (d) identify strategies for care and/or interventions.

### **Definition and Symptoms of Trauma**

The definition of trauma is “any experience that a child perceives as terrifying and feels hopeless and powerless to do anything about in his or her life, safety, or situation” (Kuban, 2012,

p. 15). The Minnesota Department of Health (MDH) (2013, p. 13), describes Adverse Childhood Experiences (ACEs) as an “experience in a person’s life occurring before the age of 18 that the person remembers as an adult. The nine ACEs are:

- physical abuse
- sexual abuse
- emotional abuse
- mental illness of a household member
- problematic drinking or alcoholism of a household member
- illegal street or prescription drug use by a household member
- divorce or separation of a parent
- domestic violence towards a parent
- and incarceration of a household member”

A research study by Kessler, Sonnega, Bromet, Hughes, and Nelson (1995) defines the stress disorder associated with the impact of trauma. Posttraumatic stress disorder (PTSD) has varying degrees of manifestation specific to the age and development of children (De Young et al., 2011). Understanding the degrees of effects according to Coates and Gaensbauer (2009), relies on research to provide an understanding of the symptoms underlying PTSD. Typical behaviors include avoiding any or all circumstances surrounding the child’s adverse experience. All associations to trauma incidents make it difficult to interact with others in much the same way. Children are afraid of the experience happening again and are coping with the psychological stress of painful memories (De Young et al., 2011).

According to Lyon and Budd (2010), in very early years of growth, it is difficult to understand what experiences have affected infants, toddlers, and preschoolers as their vocabulary and verbal abilities are just beginning to develop. To understand the capacity of trauma on their emotional responses or brains, it can be helpful to rely on caregiver reports and/or diagnostic measures (Eslinger, Sprang, & Otis, 2014).

Trauma changes children's emotional responses. The first emotional change is in their hyperarousal feelings. Lieberman and Knorr (2007); Pynoos et al. (2009); and Scheeringa, Zeanah, Myers, and Putnam (2003) report that hyperawareness to any aspects of reenactment of traumatic events can determine how the child responds to stressors in the environment.

Irritability, anxiousness, and disruptive behaviors are all emotional responses that can cause a child to shield themselves from more trauma. Hyperarousal reactions need to be lowered, as a child needs quiet rest to make up for an inability to sleep well and cope with other experiences of stress on their brain and physiology. Children also need activities which include play that allow them to become calm and express their emotions. These natural approaches can help a child play out (express) their fears and actively seek more positive experiences to help them cope and heal. Behaviors or hyperarousal reactions can be challenging, as children are unaware of how to handle overwhelming traumatized feelings. Challenging negative responses are outbursts, lack of concentration, being overly startled, and irritability (De Young et al., 2011).

The most challenging response to the impact of trauma is when children reexperience thoughts and feelings. As Scheeringa et al. (2003) explain, reexperiencing is overprotective, recurring memories that saturate the mind with internal thoughts, feelings, and reactions. This reexperiencing can guide their play by incorporating the event into how they are interacting or socializing with others. And interestingly, for some children, reexperiencing may not always be distressing. Many times, children are unaware of the effects from memories in play and may not understand why they are acting as they are (De Young et al., 2011). It is important to understand that children may have little or no recollection of the event but are processing it through everyday activities and play (De Young et al., 2011).



Avoidance, hyperarousal and reexperiencing are the common symptoms of trauma and PTSD. The common symptoms of trauma are explained further in the American Psychiatric Association's psychological measures on sensitive criteria for PTSD. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), provides diagnostic measures for young children (Scheeringa, Myers, Putnam, & Zeanah, 2012). The diagnosis for PTSD criterion by the DSM-5 (Scheeringa et al. 2012), states as follows for the symptoms of reexperiencing, avoidance, and hyperarousal symptoms:

a) Intrusive and distressing recollections, nightmares, dissociation, psychological and physiological distress at reminders. b) Avoid thoughts, feelings, and conversations; avoid activities, places, and people; and diminished interests emphasize play constriction, socially withdrawn behavior, and restricted affect limited to positive emotions. And c) sleep difficulty, irritability includes excessive temper, concentration difficulty, hypervigilance and exaggerated startle response. (p. 361)

Scheeringa, Zeanah, Myers, and Putnam (2005) report on a study in which young children with PTSD symptoms. The sample of young children was investigated over a 2- year period. The results indicated PTSD symptoms showed a decrease in reexperiencing symptoms and an increase in avoidance symptoms. These findings represent an importance in determining early identification and diagnosis of trauma to prevent potential disorder in typical development (De Young et al., 2011).

Kuban (2012) acknowledges the effects of trauma are universal and witnessed in every culture. Across the world, children share in the experiences of trauma, leaving lasting impressions of hopelessness and disturbing experiences. Common symptoms of trauma among all children are feelings of lack of security, uneasiness, anxiousness, hurt, irritability, anger, and thoughts of being a casualty.

## **The Effect of Trauma on the Brain**

On a basis of understanding, there is much to learn on the development of the brain and changes that occur from the impact of trauma. According to Delima and Vimpani (2011), injury to the brains of young children occurs as early as in utero. The affects make it challenging for the brain to regulate emotions. The common occurrences and incidences of trauma are in relation to maltreatment, neglect, abuse, and spontaneous violence and /or accidents. Children, at a very early age, are undergoing rapid brain formation, and it is critical that their brain growth changes along with maturation and typical experiences. When this growth is disrupted by trauma, the child is emotionally unable to handle these experiences because of the brain's structure or system's lack of development.

Understanding how the brain forms also helps to understand how adverse experiences change its structure. Early examination by physicians using imaging technology have relied on scientific studies to determine if changes to the brain are indeed incurred by abuse or maltreatment in the early years of a child's growth pattern. Through experiential data, they have learned that affectively, stress to the brain does in fact make unmistakable deficits to the growing brain. In accordance with a study by Guerri, Bazinet, and Riley (2009), imaging through neurobiological compilations have detected adverse changes to the formation of structural brain tendencies. The intricate processes a brain needs to be able to form and connect with psychological and physiological systems, that support emotional and cognitive functions, are temporarily and discreetly changed upon impact of maltreatment, neglect, abuse, or exposure to violence (Delima & Vimpani, 2011).

This is proven by research collaborations of Chrousos and Gold (1992); De Bellis (2001, 2005); De Bellis, Keshavan, Shifflett et al. (2002); De Bellis, Baum et al. (1999); De Bellis,

Keshavan et al. (1999); De Bellis, Hooper, Woolley and Shenk (2010); McMillan et al. (2009); and De Bellis, Keshavan, Frustaci et al. (2002) who have identified biological patterns associated with typical brain responses inherent in how we react to stress. Through these naturally occurring responses the brain connects one's emotions and thinking processes. Simply put, a baby is born with all the brain cells, or neurons, s/he will ever have. These neurons need to make connections via synapses, the spaces between the neurons where electrical impulses create pathways. Connections are made when a child has experiences. Experiences during infancy and childhood form the connections that shape the brain. If these experiences fall into the category of ACEs, the brain is then structured to manage the trauma or stressors (Delima & Vimpani, 2011).

According to Chrousos and Gold (1992); De Bellis (2001, 2005); De Bellis, Keshavan, Shifflet et al. (2002); Giedd et al. (1999); and Kumar et al. (2009), the limbic system is a good starting point for studying the relationship between brain and mind. The limbic system has subsections called the hippocampus and the amygdala. This system incorporates emotions, memories, and cognitive abilities. The hippocampus is an area in the center of the brain that relies on messages to help regulate our emotions. The amygdala also processes emotions and in addition, codes our memories into usable material that we can access to understand new experiences. Another part of our brain that is vital to normal growth and functioning is the prefrontal cortex. The prefrontal cortex manages executive functions such as processing information, thinking, and regulating of emotional responses. It allows one to manage complex behaviors, along with controlling and organizing emotional reactions. In the event of trauma these systems are adversely affected by the disorganized connections they make. A young child experiencing negative information, emotions, or harm, will begin to process the information through the brain which then responds with a plan. The plan may help children to shut down,

run away, hide, or respond with physical aggression to secure themselves for survival. This system is amazing in the fact that it automatically adjusts to oncoming information or phenomena and assumes that a response is needed. When adverse conditions occur, the brain begins to re-adjust the typical connections to accommodate the new and negative environment (Delima & Vimpani, 2011).

De Bellis, Baum et al. (1999); De Bellis, Hooper, Woolley and Shenk (2010); McMillan et al. (2009); and De Bellis, Keshavan et al. (1999) explain how PTSD symptoms are ascertained through the limbic system, in response to hormonal changes and malformations of receptors that link to each other called neurotransmitters. Neurotransmitters are the chemical messengers that deliver and balance signals between neurons (nerve cells). When a child experiences ACEs, a biological stress response occurs. The neurotransmitters create new connections to help cope with the negative situation. These pathways or connections in turn become the new way to react to a situation. Changes within the brain structure occur as the brain figures out how to stay safe, or how to keep the child safe. Thus, this becomes the new learned pattern of behavior for the child. These changes can dull and impact otherwise the brain's normal abilities to use appropriate behaviors. Children often are aware that before trauma, their behaviors were acceptable. So, when they see themselves acting differently, and the reaction is no longer positive, they may also feel a lack of control in their lives (Delima & Vimpani, 2011).

According to Delima and Vimpani (2011), serotonin, dopamine, and noradrenaline stabilize stress in the body and how the brain functions. Too much, or not enough of these, can result in an imbalance, that reacts according to learned behavior. Arousal behavior interacts with the change of neurotransmitters and begins to overreact. This overreaction is seen as hyperarousal and oversensitivity. The opposite is true with an imbalance of serotonin where the

change, in effect, responds negatively to coincide with the outcome of depressed or altered moods, which in turn results in anxiousness.

These changes to the formation of the brain in the early years make a critical reorganization. The detrimental effects to the brain can result in overt, psychological changes that affect the critical period of growth in young children. In confirming analysis by The Child and Welfare Information Gateway (2015), evidence supports the accumulated research on the brain that “traumatic experiences may directly affect memory, language, emotional and brain development, all of which interfere with mastery and acquisition of new skills” (McConnico et al., 2016, p. 36).

Delima and Vimpani (2011) state young children who undergo exposure to trauma that is violent in nature have an even greater response to the effects. The effects on the brain change the ability of the brain to be able to grow. The historical data, shown in the studies cited above, go on to discuss the severe effects on the brain, as connections cease to expand, a child is then in danger of developing dysfunctional use of their brain. This is seen in behaviors of aggression, self-harm, acts of disconnecting from close relationships, and in anxiety and/or depression. These are all consistently referred to as internalizing and externalizing personality traits. It is important to understand how children at this point are unable to change their brains to function typically until new connections of their system are created through new experiences, safe encounters, and positive loving care in relationships with others. It is through new occurrences, at an early age, where children can begin to heal their brain through new connections. The plasticity of the brain is miraculous, as it is through growth and formation, that children can begin to express themselves appropriately and extensively, which is vital to ongoing healing.

## Care and Approaches for Young Children

Children who have experienced trauma may be unable to understand their surroundings and others now as secure or typical. Because of stressful events, their brains have adapted to functioning skills around the stressors of trauma. Their sensitivities to stimuli have increased their awareness around staying safe. Sadly, children with trauma do not understand that their responsive emotions may be complicating the way they grow. However, they are doing the best they can with the emotions they are feeling (Swick et al., 2012). Swick (2005) states that young children identified with the stressors of trauma need consistent environments that increase their abilities for appropriate functioning. Perry (2002) agrees much of their physiological and psychological systems are overloaded with sensory information corresponding to their trauma experiences. Children with adverse experiences need calm, secure, caring relationships along with new play experiences in learning how to cope with their feelings (Swick et al., 2012).

**Care.** According to Kuban (2012), care is about healing the whole child. Care is provided in settings where s/he resides and plays in which caring relationships are formed and endured. There are many steps to this process to ensure a child can learn and function. The reality for children with trauma distress is their need to persevere and trust that others are looking out for their safety. This is accomplished by helping children regulate their emotions and by providing routines that include play, basic needs, and family cohesiveness. If children are to succeed, interventions must be accessible to promote continuable growth of social-emotional, and cognitive skills which are needed to become self-sufficient adults. What follows are strategies and interventions to aid in creating a familiar setting and provide goals for the process of healing.

**A sense of safety.** A sense of safety is the genuine priority in healing the experiences of trauma. Children need concrete knowledge regarding their environment and the grownups caring for them. They need reassurance of their security and safety in their environment. This might include locking doors and windows and providing procedures on interacting with strangers (Kuban, 2012). The primary consideration for young children experiencing the impact of trauma is to enhance the family structure to safety with other places, including grandparents' homes and school settings. Keeping the child safe emotionally and physically as well giving attention to complex emotions from stressors will begin to address the many challenges with traumatic symptoms (Goldfinch, 2009).

**Secure relationships.** Goldfinch (2009) observes that young children need positive and secure relationships that create a harmonious familial cohesion where interests and activity participation, together, are constructive and engage connections. Caregivers and parents can begin by creating a household where accommodating practices can include positive discipline, emotional guidance, play encounters that are natural, such as story reading, listening to music, and eating meals together. This also creates routines that young children thrive on and can begin to use to calm their own arousal systems. The outcomes for most children in these stages of relationships is to restore trust that may have been lost following the affectual changes from trauma. Another consideration to care is for caregivers to understand their own personal experiences with trauma. Caregivers can understand how trauma may have affected them in the past and apply the same compassion and positive coping skills for their child. Sometimes help may be needed for parents to overcome their own trauma stressors and responses to promote a harmonious home. By engaging in therapy on their own or with their child helps to ensure healing all around.

Kuban (2102) affirms that making positive connections with caring individuals provides the security and warmth needed for meaningful opportunities to lower stressors associated with trauma and support health. Associating positive attributes within society is another step in the process of developing resilience. Opportunities in activities and social interactions in the community help the child to gain meaningful resilience.

**Participate in routines.** Researcher, Perry (2009), engages with the idea that all children, given the opportunity, will flourish in an environment that creates routines and predictability. It is so important for families to establish consistency regarding their daily lives. This ensures that children understand what each day entails and that there are no surprises. Fear is common for these children and they need to be in a safe routine situation they have come to know as familiar on a regular basis. This allows families to come together and help each other through the abnormal functioning that a child is enduring from the adverse experiences (Swick et al., 2012).

Kuban (2102) supports that establishing familiar routines for children provides a sense of predictability and structure. Providing and maintaining structure and routine at home and in school reinforces traditions which enhance individuality in children and honors cultural interests and traits. These traditions and routines are opportunities for children to express their feelings and build confidence and strength within their cultural background.

According to Goldfinch (2009), children undergoing the stressors on emotional and/or cognitive development, especially need structure, routine, and predictability in school. Their outcomes are brighter if they can assimilate to specific routines within a classroom of learners through practice, participation, and reliable guidance. Harmonious classrooms are an intricate part of social growth, resilience, learning appropriate behaviors, and meaningful relationships which are crucial for emotional regulatory responses. Children can be guided by instructors who



help them learn how to slowly participate, make choices, and understand emotions of other children. Instructors can also monitor any progression or setbacks the child makes to increase interventions or adapt goals. Researchers believe the best outcomes are through practice acquired through guided responses in concurrence with appropriate behaviors, and ongoing support on sharing personal emotions. This allows the process of healing as slowly as needed to accommodate growth in all areas of learning.

**Reduce arousing stress.** Creating places for a child to achieve calmness, is important for a child who may feel overwhelmed by too many people, noise, or lights. Morrison (2009) explains that relationships and change can seem scary to a child who has experienced trauma. A child with trauma may feel different than others. This can cause them to feel isolated and to withdraw from others. They may believe they do not belong to the group and feel powerlessness. This may increase disruptive or negative behaviors and stressors. Caregivers can provide a positive sense of control, capability, and secure relationship. The result is that the child can count on caregiver guidance for what they may need to calm themselves. It is also important, that the child experience friendships in which s/he can share laughter, caring, and positive experiences. Sociologist Kuban (2012) encourages caregivers to ensure emotional support to children after experiencing emotional crisis as such:

Holding, rocking, and cuddling young children gives comfort and restores calm. Playing, singing, dancing, drawing and other art activities, as well as storytelling and theatrics offer developmentally appropriate ways to help reduce a child's trauma-reactive emotions. Physical activities such as breathing exercises, muscle relaxation, yoga, and stretching can also be effective in ameliorating the uncomfortable stress and tension associated with trauma. (p. 16)

**Acknowledge and regulate emotions.** According to Kuban (2012), "The symptoms and reactions in trauma are often driven by worry, fear, and anger and are difficult for children to

control” (p. 16). Many children may feel a sense of powerlessness in their reactions to overwhelming emotions and inability to manage accompanying behaviors. The process to help in self-regulation of emotions for children, is to name and identify emotions and body sensation awareness. This helps children talk about how they are feeling and express what is happening inside their thoughts and bodies. This can encourage healthier reactions when overwhelmed by uncomfortable emotions and sensory responses.

Young children are just learning about their own emotional responses in early development. Compassion is essential when guiding children’s knowledge about the feelings they may associate with adverse experiences. Reassuring children how the feeling of fear is a normal response to a scary experience can help in reducing worry and/or internalizing that they have done something wrong. Reassure children that others may feel the same or similar feelings. The symptoms of trauma can easily be internalized and may include stomachaches, headaches, nightmares, fear of being alone, nervousness, feelings of wanting to hurt the person that caused the harm, and recurring thoughts of what happened (Kuban, 2012).

Chazan and Cohen (2010) conducted a qualitative and quantitative empirical study on the importance of play therapy. The study included observations on 23 children whom experienced violent incidents. The children were videotaped during play sessions without directives. The study portrayed that children can soothe themselves while playing when reexperiencing or reenacting trauma experiences.

Regulating emotions can involve simple play. Connelly, Cosgrove, Norris-Shortle and Taylor (2011) and Lieberman and Van Horn (2008) believe that children’s typical or normal developing characteristics implicitly form around play. Play is also needed to heal the pain, anger, and detachment associated with trauma. Play in its essence is purely reminiscent of all

that children need to learn about the world around them. It is in play that characteristics are enhanced along with development. This begins with the genetic make-up of a child in utero and inspires natural tendencies to learn (Cosgrove & Norris-Shortle, 2015).

Play is paramount to learning. It is through play that patterns and connections are formed in the brain, relationships are constructed, self-awareness is obtained, trust is learned, and cause and effect are explored. Appropriately, Brown and Vaughn (2009) complements this natural process on play as, “play, specifically, exploration in play, lies at the core of development of social relationships, cognitive development, and problem-solving skills (Cosgrove & Norris-Shortle, 2015, p. 51).

Play as therapy is about letting a child freely play without directing outcomes. This encourages a child to securely discover their feelings on their own. Research studies also confirm, according to Ginsberg (2007); Cohen, Lojcasek, Muir, Muir, and Parker (2002); Hanna (1990); Guerney (1983); and Herschell, Cazada, Eyberg, and McNeill (2002), it is essential the caregiver or parent only witness and be aware of the type of play the child is exhibiting. This may help the parent to see and understand the behaviors the child is experiencing. Behaviors can then be seen and understood as either interrupting or reconciling the feelings of abuse, neglect, or trauma. Understanding the child’s play behavior can be reassuring to the parent as the child begins to process their feelings which are normal and productive. A caregiver needs to understand and be aware of their own feelings and predisposed notions of typical behavior, as this will change considering a child with trauma (Cosgrove & Norris-Shortle, 2015).

Swick et al. (2012) states it is significant for caregivers to understand that children with changes in development due to trauma are highly susceptible to insecure attachment and distress in relationships. This may even prevent children from engaging in play. Attachment can

increase; however, it takes both time and secure caring relationships when the child is experiencing distress. Children need to feel safe before they can engage in play.

### **Strategies and Interventions for Home and School Settings**

Chazan and Cohen (2010) encourages that it is important to begin any course of intervention with an intentional approach to care and strategies. Caregivers and families are the most important part of a child's life. It is beneficial for school instructors to work together with caregivers and families in approaching care and the child's individual needs. These needs may be demanding while repairing the impact of abuse, neglect, or violence. Corroborating together through understanding, observation, and gentle communication, combined with compassion, guidance, and patience will help the child persevere and heal.

According to Chazan and Cohen, (2010), a hopeful aspect in healing for young children is that once they are aware of who they are in relation to their surroundings gives them the ability to process their adversities. Separating themselves from the reality of trauma gives children the opportunity for rational thinking about disturbing thoughts, memories, and negative behaviors. Through self-awareness, they can separate their experiences from their sense of self and play out their images through symbolic meaningful play. Along these aspects of self-awareness through play comes the enduring need for children to have their talents recognized. Their talents are a special attribute to who they are and for what they can achieve. This allows for a gain in confidence and feelings of acceptance.

Strategies and interventions can be as simple as music and symbolic play in the classroom or home settings. Symbolic play is play acts directed by the child toward objects, self, or others to signify events, exploratory play, and/or conventional object use (Buron & Wolfberg, 2008). Some interesting responses in play therapy are that children seem to hum along to music

in the classroom resulting in a calming experience. Humming can be very effective in helping a child feel calm when reexperiencing the trauma. It is believed that a song, especially if it is familiar, provides structure because it has a starting and ending, which is comforting to a child with reoccurring disturbing memories (Chazan & Cohen, 2010, p. 141).

Symbolic play can include games, activities, and art. Drawing pictures is a form of symbolic play which can represent how the trauma happened. This can provide a child a sense of psychological distance while processing traumatic experiences. In a research study on play therapy, symbolic play was incorporated to help a child grieve (Chazan & Cohen, 2010). The researcher studied how a child drew pictures of his siblings and family violently attacked. In the attack, the parents were killed. The child represented his siblings and parents as birds and butterflies. Through symbolic play, the child reenacted the traumatic experience and was able to process emotions. The drawing ended with the birds and butterflies crying as the mother and father were killed. Symbolic play can help a young child process the trauma in a safe way by crossing into the thoughts of the event and come back out of it safely. This process of child-centered symbolic play helps a child begin to feel resolve in their adverse childhood experiences. This can allow a young child to move forward and past the trauma. There are times when the child-centered play may exhibit disturbing and/or disruptive behaviors and the child will need the guidance and safety of an adult. However, in most cases children can guide themselves through play in meaningful scenarios that gives them a soothing sense of calm (Chazan & Cohen, 2010).

Desmarais (2006) phrased it “as a field of repair,” in which children have opportunities to function, grow, and attain resilience. Child-centered play, awareness, symbolism, narrative, and imagination create surroundings in which young children can process the meanings of their

experiences. Without this, the terrifying experiences are prone to reenactment and behaviors in which the child can remain trapped in trauma (Chazan & Cohen, 2010, p. 148).

A current approach for support in a classroom, is an intervention program called Supportive Trauma Interventions for Education (STRIVE) (McConnico et al., 2016). This is a program created to help schools, such as early as early childhood education classrooms, to support the needs of children with social-emotional impact from trauma. The focus is to remedially increase the ability of teacher interactions to recognize, respond, and assist the needs of children with trauma. Current programs in the field of education only look at the specific needs of the individual child, whereas STRIVE proposes to create a system where the child and teacher interact as a positive support system. Early childhood educators are trained to respond sensitively to the complex experiences of trauma, teach effective coping skills, and communicate empathy response. A shift in thinking is the main goal of STRIVE in educational systems. The goal is to educate instructors using an approach for thinking sensitively about trauma. This means viewing the behaviors of children as communication versus misbehavior. Educators are instructed on the prevalence of trauma, philosophy of our current society's view of dominant roles, impact of culture inequality, development, psychological needs, emotional regulation, and neurobiological effects of trauma. Overall, intervention strategies provide secure relationships that strive for empowerment and resiliency in both educators and children which can encourage an atmosphere of learning, attachment, and healthy functioning.

Another alternative approach in intervention is animal-assisted therapy (AAT). Children interact with the natural responses of animals to attune, attach, develop functional skills, and regulate emotions. Animals can play an important role in attachment when children feel a disconnection to others and self. The unconditional acceptance that an animal provides can help

a child begin to trust and feel a sense of belonging. Children can benefit from animal companions such as a pet right in their own home. There are programs available in many states and communities that create goals and objectives for implementing therapeutic healing from animals assisted by therapists and trainers. Animals can provide the needed connection to another living thing, as animals are not judgmental of children's traumatic responses and/or behaviors (Firmin, Brink, Firmin, Grigsby, & Trudel, 2016). Some of the most beneficial effects from AAT is in lowering stress states. In a study by a clinical nurse and research director, Halm (2008), learned that animals provide therapy and healing when interacting with patients in health care facilities and hospitals. Halm (2008) documented that during AAT visits there were significant reductions in patients' blood pressure, "neurohormone levels, and state anxiety" (p. 375). Lowered stress and anxiety were also reported in a nursing study by Stoffel (2006), where "Children exposed to AAT were more likely to report relaxation and calmness" (Halm, 2008, p. 375). Wu A, Niedra, Pendergast, and McCrindle (2002) surveyed patients and their families and the most common response for including an animal in recovery was how "children and parents share that the snuggling contact associated with AAT was beneficial to healing" (Halm, 2008, p. 375).

### **Summary**

Young children with trauma can heal within a secure environment, secure relationships, and regulation of their emotions. Kuban (2012) states engaging in cultural traditions, supporting familiar routines, and therapeutic play can help build confidence and resilience so that children may move from victim to survivor. It is crucial to remind children regularly that this is just a moment of experience in their life and it isn't who they are.

According to Bancroft (2004) the importance of family in a child's life is critical in healing a child dealing with trauma. Family and/or caregivers that can give a child a nurturing place where trust is the central theme can improve the chances that healing can take center stage. This gives a child the ability to process their emotions, resume growth patterns, and establish secure relationships. It is also important to specify that healing needs to be at the child's own pace (Swick et al., 2012).

McConnico et al. (2016) reports that approaches and interventions should be specific to the child's needs by including a therapist, family support, and/or school programs. The STRIVE intervention program is a possible option where the child can receive care while in school to support families with at-home care. The STRIVE program can initiate positive awareness, continue educational support, provide community initiative, and positive relationships. In environments in which a child feels a sense of support, safety, trust, sensitivity, and positive relationships help a child experiencing trauma to thrive.

AAT can be an alternative approach, which benefits the child in attachment when other therapies have not been successful (Halm, 2008).

### **Overview of Findings**

All studies reviewed in this research shared similar findings regarding the impact of trauma on brain growth, development, emotional regulation, and healing. However, there was lack of specific information on how trauma impacts development and growth in young children. It also lacked detailed information on how to implement an intervention program and/or skill young child need for development and learning in their surroundings. Future research studies are needed to provide caregivers and educators resources to understand the impact and symptoms of



trauma on development and behavior. This can help a young child with trauma receive the help s/he needs through academic learning, home support, and supportive relationships.

Thankfully, there are new criteria changes in the DSM-5 which now applies to children under the age of 15 years. This provides the ability to identify and diagnose early symptoms of trauma in the early years of development in young children. It provides an opportunity, according to Scheeringa, Zeanah, Drell, and Larrieu (1995) in understanding symptoms of trauma when children are just beginning to develop verbal communication such as “loss of interest in play activities rather than in school or work activities” (Scheeringa et al., 2012, p. 359). This can give awareness for more current programs and online resources for caregivers, families, and schools to help children with the impact and symptoms of trauma. Currently more training is needed to increase strategies for very young children, especially as early as infancy. As Osofsky and Lieberman (2011) point out, this has been a problem for many years because in educational structures there is a lack of understanding, criteria, and programs to implement services that can help early learners who have encountered trauma under the age of five (McConnico et al., 2016).

Goldfinch (2009) confirms that care is a priority as a child learns to cope with the underlying effects to brain growth and emotional regulation. Young children need guidance to learn how to see the world separate from themselves, so they may create an awareness as separate from the trauma. Therapy consists of support in individual needs, a secure environment, play therapy with freedom of expression, and secure relationships which enables brain growth to continue or resume. Caregivers and educators are children’s most important support systems, so it is important that all are part of a routine structure of care.

The Centers for Disease Control and Prevention (CDC) (2016, p. 6) advise how important it is that effective programs are needed in proactive and preventative care for children and families experiencing symptoms and adversity with trauma. This can accomplish a possibility in preventing adverse health outcomes for children which begin with “strategies that address the needs of children and their families as follows:

- Safe, stable, and nurturing relationships and environments (SSNREs)
- Voluntary home visiting programs can help families by strengthening maternal parenting practices, the quality of the child’s home environment, and children’s development
- Parenting training programs
- Intimate parent violence prevention
- Social support for parents
- Parent support programs for teens and teen pregnancy prevention programs
- Mental illness and substance abuse treatment
- High quality child care
- Sufficient income support for lower income families”

According to McConnico et al. (2016), the experience and outcome of trauma makes it imperative to provide early intervention to enhance the possibility of a child reaching their full potential when the impact affects brain development, social-emotional formation, and cognitive growth.

Goldfinch (2009) encourages to begin any strategies or approaches to intervention is to first determine the individual needs of the child and form consistent goals. Many children experience similar symptoms; however, it is crucial to adapt the intervention to their specific needs. With an understanding of trauma, its impact on the early years of growth, therapy and care, children can begin to grow through reactive responses and enjoy a sense of who they are and be confident in their perseverance and own achievements.

Swick (2005) asserts that there are critical approaches to ensure typical development progression for children who have experienced trauma. First, basic needs of security and safety are addressed so a child can begin to heal and engage in play and interests. Second is attachment, so the child can establish a trusting bond with a caregiver. Third is awareness of self, so the child can see the trauma as separate from who they are. This can help them from remaining stuck in the symptoms of trauma (Swick et al., 2012).

The positive outcomes associated with therapeutic play are the cornerstone to healing and continual growth; physically, mentally, emotionally, and cognitively. The complex structure of play therapy, which involves incorporating a therapist, caregiver, or educator, allows the child to express the thoughts and feelings causing disturbing or terrifying thoughts, nightmares, and behaviors (Chazan & Cohen, 2010).

### **Chapter 3: Conclusion**

Young children's growth is impacted by Adverse Childhood Experiences (ACEs) and trauma. Caregivers and educators need to learn to identify trauma and its symptoms to be able to help children cope and heal. The effects of trauma on young children begins with identifying the symptoms, allowing for compassion and understanding, and to begin the steps to articulate appropriate care (Goldfinch, 2009).

It is critical for educators and caregivers to know how to identify a child experiencing symptoms from trauma. Then a child can get the help they need immediately to address their suffering and challenges with coping, learning, and growth. There needs to be much more awareness on the effects, symptoms and impact of trauma. Much of what I see in classrooms is adults believing that children with challenging behaviors are just being naughty and then are continually reprimanded for it. I think we need to see all children as individuals with individual needs and take time to understand what their behaviors are truly communicating.

Once there is more awareness to adverse childhood experiences and its affects, there can be more assistance in resources for children, caregivers and educators. Interventions need to include early identification, diagnosis, support, counseling, and education. However, there also needs to be better resources and programs in place in our communities, schools, and homes to educate on the reasoning of why the instance of trauma needs to change for our children's futures.

Swick et al. (2012) verifies that young children who have had experiences of trauma are negatively impacted with improper brain functioning. The brain, cognition, growth, and emotional regulation are furthered impacted by stressors associated with trauma. Consistent

relationships and secure attachment with caregivers, creates an atmosphere where children can feel calm and attain resilience.

Delima and Vimpani (2011) acknowledges that the most troubling aspect of trauma is the lifelong impact it has upon the neurobiological and psychological systems of a child. Once the critical period of growth has passed it is difficult for these processes to recover. This creates a life for a child that is symptomatic and includes impairment of typical functions. Early intervention, where the child's emotional development has yet to reach complex processes is an open window to reprocessing trauma in the limbic system and creating new connections that coincide with appropriate growth and regulatory structures.

The early years of development are critical in respect to providing early therapy for children with trauma. The ability for the brain to create new connections makes it possible to overcome trauma and lower the lifelong effects of PTSD (De Young et al., 2011).

According to Morrison (2009), the possible outcomes in therapies are the ability for young children to feel they are acknowledged, have a place in others' lives, are capable, and have understanding. This gives young children hope, courage, and love to face fears and future challenging experiences.

Cosgrove and Norris-Shortle (2015) affirms that caregivers are central to the care and support of children, especially when trauma has occurred, and rehabilitation of relationships are center stage. It is so important that caregivers are aware of their own emotions and possible areas of unacceptance in response to trauma. It is an opportunity for their child and themselves to create a bond around play, living in the moment, and learning about each other's capacity for healing and well-being.

As with all interventions, it is essential to apply a therapy that meets the individual needs of a child which can positively affect growth and recovery. McConnico et al. (2016) states that sensitive trauma awareness approaches can provide support and success in children affected by trauma. The recommended practice of the STRIVE program can enhance a universal approach in classrooms. It has a unique ability to create supportive relationships for a child, educator and other children in classrooms, and focus on individual strengths and needs.

According to Halm (2008), animals can be an interesting alternative to psychological and/or educational therapy. Interacting with animals is a way for a child to achieve attunement and attachment that does not hinder on understanding or acceptance. AAT can mirror characteristics and attributes that can enhance healing through instructional programs that initiate routine, structure, awareness, and neurobiological patterns, and emotional responses. AAT is an alternative therapy that promotes caregiver and child symmetry and/or positive memories to build resilience.

In all, we want children to be able to heal and begin to again feel a part of their families, educational settings, and surroundings. It is important young children with trauma thrive in their surroundings and believe in themselves, so they can reach their potential, dreams and aspirations. It is crucial for children to experience the feeling of being a survivor and not a victim. Enlisting in activities and visual drawings to engage young children in a timeline of where they began and how they have flourished since their traumatic experience(s) may help them see they are a unique individual separate of adverse experiences (Kuban, 2012).

On a final note, I am intrigued by the neurobiological hormonal regulatory abilities that children feel when interacting with animals. I am furthering my research on these effects with animals by studying AAT in my second paper.

#### **Chapter 4: Position Statement**

I always felt compassion in my teaching experiences when I would see a child struggling emotionally with learning. I wanted to learn more about how trauma changes children's lives and learning. I reflect upon the case of Henry, who has a home and school atmosphere in which he feels unsecure. Emotional regulation was a challenge for him. He feels the stigma of his emotional challenge label and has few if any friends. He was an intelligent boy yet struggled with accomplishing his learning. It broke my heart to see Henry continually reprimanded, by paraprofessionals, for his inability to control his emotions. Henry just really needed more compassion, sensitivity, care, coping skills, a friend and play.

This study gave me incredible meaning and understanding on making sure to see through a child's eyes and begin to teach the whole child so that they can learn. This research increased my understanding and knowledge of how trauma effects early growth, the brain, emotional regulation, attachment, and learning. I am so glad to now understand that helping a child with trauma can be as simple as trust, security, play, and calm. It is sad to think that young children with adverse experiences are just trying to cope and survive when they should just be playing and growing.

Most of the academic articles I utilized in this study, were very difficult to process and understand and were not written as reader, parent, or educator friendly. Much of which the vocabulary and language was challenging to read. This research study, however, gives me a basic understanding of trauma, its effects, and how to begin an approach and intervention that brings stability to a child who is experiencing adverse reactions and/or PTSD. PTSD is an extremely painful disorder; mentally, emotionally, cognitively, and physically. If this can be

avoided as a lifelong impact, a child has a chance in being happy and growing up to reach their potential and follow their dreams.

More research and training need to be provided for families and educators to learn about trauma and its effects on children. More awareness, sensitivity to children's feelings, and early identification are essential to children to receiving the help they need. In ending, remember the infants who cannot verbally communicate their suffering from traumatic experiences, yet are impacted lifelong.

I know wholeheartedly that sometimes care must come before a child can be capable of learning curriculum in the classroom. One of the most important lessons I learned on the impact of trauma on young children is to just listen and care.

**Note:** The names in this study were changed or taken out to protect the children's anonymity.



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**The Effect of Animal-Assisted Intervention on Young Children with Trauma**

by

Michele M. Pettit

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Starred Paper Committee:  
JoAnn Johnson, Chairperson  
Ming-Chi Own  
Martin Lo



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## **Chapter 1: Introduction**

As an early childhood special education teacher, I am always searching for complementary approaches for helping children who are experiencing challenges with emotional regulation or learning because of stress or trauma. So often when working with children they are not able to learn because they are not able to trust. Teaching is not the most challenging part of a school day, it is being able to connect with children who are frightened and unable to express their emotions. I personally have a love of animals and feel much calmer when with my own pets. One way I found to connect with children in the classroom was to question them about their family and pets. This technique would bring smiles, along with sharing of their life stories. I believe this approach can positively help children with trauma and Adverse Childhood Experiences (ACEs).

I have personally learned about the use of animals as a therapeutic technique by assisting at a therapeutic equine facility accredited by Professional Association of Therapeutic Horsemanship International (PATH Intl.). I assisted as a side-walker, walking in rhythm with a horse carrying a child rider with special needs. I learned firsthand how animals made a positive difference in children's emotional responses and communication skills. In addition, by caring for a horse, the children's cognitive and physical abilities also increased. The therapeutic riding program included an approach in which objectives were created by a registered nurse in response to the children's needs and the parents' goals. The facility works with the local schools to provide a therapeutic program for students with emotional challenges and who are coping with adverse experiences. Transportation was provided to transfer students, paraprofessionals, and teachers to the facility during weekdays.

While volunteering at a therapeutic equine facilitated program, I was fascinated by the immediate positive emotional responses, the interactions, and the engagement the children exhibited the moment they entered the horse barn. I wanted to learn so much more about the possibilities of Animal Assisted Therapy (AAT) and how and why it works to increase the health and well-being of children. In all the sessions I volunteered, the children entered the barn with amazingly huge smiles. They couldn't wait to saddle up, mount their horse, and follow any commands for the activities. These activities included riding across the arena and placing objects such as stuffed animal, rings, or balls in various containers or riding to a friend. Other activities were riding in cross patterns in teams and guiding the movements of the directions of the horse. Grooming the horse at the end of sessions encouraged the children to learn about caring for an animal. The children's smiles and eager motivation made this alternative therapy universal. It did not matter what special needs the children had, they all exhibited positive emotional responses and eagerness to be around the horses.

Children can have a special attachment with animals. An attachment and connection can be created with various companion animals such as a fish, cat, dog, or horse. The scientific term that represents this attraction is called biophilia. Biophilia "is a phenomenon of a seemingly innate attraction to animals in children" (McCardle, P., McCune, S., Griffin, J. A., Esposito, L., & Freund, L. S., 2011, p. 75). The attraction forms an emotionally secure feeling of love and friendship. To a young child, this forms a relationship that creates an opportunity to love unconditionally, to share feelings, and to care for another living being. These attachments to animals give meaning to relationships, learning, and growing and often provide an approach to healing. Animal therapies can also help children feel a sense of security, regulate emotions, trust others, engage in routines, learn cognitive skills, and enhance family cohesiveness. As one can

see, there are many psychological and physiological therapeutic advantages with AAT (Walsh, 2009a).

According to Friesen (2009), animal-assisted interventions (AAI) are defined as both therapies and activities which provide care and attachment through contact with an animal. There are many programs that provide meaningful interactions with an animal to promote social, emotional and cognitive learning. Young children who have experienced trauma are often afraid to trust again and reconnect with another living being. Animals can be beneficial to healing from trauma through human-animal interactions (HAI). AAI and HAI can give children the ability to attune and attach with another living being such as an animal. Animals can lessen the pressure associated with expectations, judgement, or stress.

### **Statement of the Problem**

A young child can experience challenges with emotions due to trauma and its symptoms. Trauma can affect relationships, along with learning and growth in the early years. The main symptoms of trauma are lack of security, trust, and attachment. Thus, it is critical to begin a therapy that a child can positively respond to when they are frightened. As an educator, it can be challenging to help children learn in the classroom if they are afraid to trust due to traumatic experiences. Whereas, including animals as therapy can provide an opportunity to interact with a child who is frightened. Animals can provide a relationship in which children can easily express emotions, fears, and anxiety. AAI can possibly be an alternative therapy where emotions and sensory anomalies can heal with an animal (Funahashi, Gruebler, Aoki, Kadone, & Suzuki, 2014).

## **Research Question**

The following research question guides this literature review to examine if animals can help in healing children with trauma:

1. What are the effects of Animal-Assisted Intervention (AAI) on young children with trauma?

## **Significance of the Study**

Sometimes after experiencing trauma, children are afraid of attaching again with another living being (Bachi, 2012). Animals can provide an alternative kind of therapy to create new secure attachments for a child and his/her caregivers. There is a correlating effect of attachment derived from interactions with animals that imitates bonding with humans (O’Haire, 2013). In response to attachment, a child can then learn to trust and regain growth. Animals are also able to help children move toward awareness to others and an openness to healing. AAI studies have shown that the responses achieved when a child interacts with an animal are positive outcomes in the recovery process (Bachi, 2012).

## **Literature Review Approach**

In this literature review, I searched books and internet resources for information on animal facilities and therapeutic programs. I also accessed peer reviewed articles through the online library at St. Cloud State University under the Child and Family Studies Research Guide. I began my research on young children birth to 10 years old under EBSCO Host Academic Premier Search, ERIC, and PyscINFO. This study focused on research found in the past 10 years. The following keywords guided my search: *early childhood, young children, trauma, animal-assisted therapy (AAT), companion animals, human-animal interaction (HAI), animal-*

*assisted intervention (AAI), hippotherapy, therapeutic animals, dogs, horses, therapeutic riding (TR), and horseback riding.*

### **Research Terminology**

*ACEs.* “Adverse childhood experience’s (ACEs) are traumatic experiences in a person’s life occurring before the age of 18 that the person remembers as an adult. The nine ACEs are: physical abuse, sexual abuse, emotional abuse, mental illness of a household member, problematic drinking or alcoholism of a household member, illegal street or prescription drug use by a household member, divorce or separation of a parent, domestic violence towards a parent, and incarceration of a household member” (Minnesota Department of Health [MDH], 2013, p. 13).

*Anthrozoology/Human-Animal Interaction (HAI).* The mutual and dynamic relationships between people and animals and the ways in which these interactions may affect physical and psychological health and well-being (McCardle et al., 2011).

*Animal-Assisted Intervention (AAI).* Animal-assisted interventions are goal-oriented and structured interventions that intentionally incorporate animals in health, education, and human service for therapeutic gains and improved health and wellness. Animal-assisted therapy (AAT), animal-assisted education (AAE) and animal-assisted activities (AAA) are all forms of animal-assisted interventions. In all these interventions, the animal may be part of a volunteer therapy animal team working under the direction of a professional or an animal that belongs to the professional himself (Delta Society, 2018).

*Animal-Assisted Therapy (AAT).* Animal-assisted therapy is a goal-oriented, planned, structured and documented therapeutic intervention directed by health and human service providers as part of their profession. A wide variety of disciplines may incorporate AAT.

Possible practitioners could include physicians, occupational therapists, physical therapists, certified therapeutic recreation specialists, nurses, social workers, speech therapists, or mental health professionals (Delta Society, 2018).

*Arousal States.* An organized system of physical and physiological responding that is related to the internal level of arousal, from sleep to waking (Fogel, A., 2009).

*Assistance Animals (also known as a Service Animal).* Assistance animals are defined as dogs and in some cases miniature horses that are individually trained to do work or perform tasks for people with disabilities. Examples include guide dogs for people who are blind, hearing dogs for people who are deaf, or dogs who to provide mobility assistance or communicate medical alerts. Assistance dogs are considered working animals, not pets. The work or task a dog has been trained to provide must be directly related to the person's disability. Guide, hearing, and service dogs are permitted, in accordance with the Americans with Disabilities Act (ADA), to accompany a person with a disability almost anywhere the public is allowed. This includes restaurants, businesses, and on airplanes (Delta Society, 2018).

*Attachment.* An enduring emotional tie uniting one person to another (McDevitt & Ormrod, 2013).

*Attunement.* A concept related to imitation of another person (Fogel, 2009).

*Biophilia.* A phenomenon of a seemingly innate attraction to animals in children (McCardle et al., 2011).

*Cognitive Development.* The aspect of development that involves thinking, problem solving, intelligence, and language (Puckett, Black, Wittmer, & Petersen, 2009).

*Emotional Regulation.* The ability to control the form and timing of one's emotional expression and feeling state (Fogel, 2009).

*Empathy.* Capacity to experience the same feelings as another person, especially when the feeling is pain or distress (McDevitt & Ormrod, 2013).

*Equine-Assisted Activities and Therapies (EAAT).* Equine-assisted activities are any specific center activity, e.g. therapeutic riding, mounted or ground activities, grooming and stable management, shows, parades, demonstrations, etc., in which the center's clients, participants, volunteers, instructors and equines are involved. Equine-assisted therapy is treatment that incorporates equine activities and/or the equine environment. Rehabilitative goals are related to the patient's needs and the medical professional's standards of practice (Professional Association of Therapeutic Horsemanship International [PATH Intl.], 2018)

*Equine-Facilitated Psychotherapy (EFP).* An interactive process in which a licensed mental health professional working with or as an appropriately credentialed equine professional, partners with suitable equine(s) to address psychotherapy goals set forth by the mental health professional and the client (PATH Intl., 2018)

*Handler.* The human end of the leash of a therapy animal team, delivering compassionate visits with their animal with skill and knowledge (Delta Society, 2018).

*Hippotherapy.* The American Hippotherapy Association, Inc., defines hippotherapy as a physical, occupational or speech therapy treatment strategy that utilizes equine movement. The word hippotherapy derives from the Greek word hippos, meaning horse. The term hippotherapy refers to the use of the movement of the horse as a treatment strategy by physical therapists, occupational therapists and speech/language pathologists to address impairments, functional limitations and disabilities in patients with neuromotor and sensory dysfunction. This treatment strategy is used as part of an integrated treatment program to achieve functional goals (PATH Intl., 2018).



*Human-Animal Bond.* The human-animal bond is a mutually beneficial and dynamic relationship between people and animals that positively influences the health and well-being of both (Delta Society, 2018).

*Limbic System.* A brain area that is in the very center of the head, between the ears, and includes structures such as the amygdala, the hippocampus, and the pituitary gland. This part of the brain is related to processes; such as attention, states like sleeping, and waking, urinary and bowel control, emotion and responses to stress and trauma, and memory (Fogel, 2009).

*Neurobiological/Neuroscience.* The study of the brain and nervous system as it relates to psychological and behavioral functions such as moving, thinking, and feeling (Fogel, 2009).

*Neuron.* Cell that transmits information to other cells; also called a nerve cell (McDevitt & Ormrod, 2013).

*Neuronal Plasticity.* The ability of the brain and nervous system to seek novelty, learn, and remember by continuing to alter the patterns of connections between neurons (Fogel, 2009). The ability of the brain to adapt or change in response to experience (Buron & Wolfberg, 2008).

*Physiological.* Physical development which includes bodily functions, such as heart rate, hormone levels, bone growth, brain activity, eye movements, body weight, and lung capacity (McDevitt & Ormrod, 2013).

*Posttraumatic Stress Disorder (PTSD).* The result of prolonged exposure to stress and threat resulting in a decreased ability of the individual to cope with stress (in the prefrontal cortex) in appropriate way, creating people who are more likely to freeze, fight, or flee when they feel threatened (Fogel, 2009).

*Psychotherapy.* The treatment of emotional or behavioral problems through psychological counseling (Buron & Wolfberg, 2008).

*Secure Attachment.* Attachment classification in which children use attachment figures as a source of comfort in times of distress and a secure base from which to explore (McDevitt & Ormrod, 2013).

*Social Cognition and Functioning.* Process of thinking about how other people are likely to think, act, and react and choosing one's own interpersonal behaviors accordingly (McDevitt & Ormrod, 2013).

*Social-Emotional Development.* Systematic changes in emotions, self-concept, motivation, social relationships, and moral reasoning and behavior (McDevitt & Ormrod, 2013).

*Therapeutic Animals.* Therapy animals provide affection and comfort to various members of the public, typically in facility settings such as hospitals, assisted living, and schools. These pets have a special aptitude for interacting with members of the public and enjoy doing so. Therapy animal owners volunteer their time to visit with their animal in the community. A therapy animal has no special rights of access, except in those facilities where they are welcomed (Delta Society, 2018).

*Therapeutic Riding (TR).* Therapeutic riding is an equine-assisted activity for contributing positively to the cognitive, physical, emotional and social well-being of individuals with special needs (PATH Intl., 2018)

*Trauma.* A deeply distressing or disturbing experience. According to Kuban (2012), "Any experience that a child perceives as terrifying and feels hopeless and powerless to do anything about in his or her life, safety, or situation" (p. 15).

## **Organization of the Study**

The purpose of this study is to identify the effects of AAI on young children with trauma and will propose to: (a) define AAI and its effects on young children with trauma (b) examine the

effects of AAI and its possible healing abilities on children and families and (c) determine if animals are an appropriate therapy for young children.

### **Summary**

Young children may benefit from alternative therapies with animals. Animals can provide emotional support for children with trauma through non-judgmental programs. Programs commonly include the use of dogs, cats, and horses. AAI and AAT programs utilize companion animals, emotional therapy animals, and assistance animals to encourage development in emotional, social, and cognitive domains. AAI programs are created to provide activities, learning, and therapy. All programs are implemented through the use and guidance of instructors, handlers, practitioners, and interventionists.

## Chapter 2: Literature Review

Animals are a complementary alternative support for children experiencing trauma. This can be a positive accompaniment to a child's home, school, or therapy setting. There are advantages and concerns in the use of animals in interventions and/or programs. Friesen (2010) asserts on how the use of AAT with children can increase "physiological, emotional, social, and physical" well-being. AAT is a common term used to explain the use of animals and another individual who is trained to provide supportive activities. These activities correspond with the child's goals and objectives. This inclusive partnership can provide children, in any setting, with an alternative support for healing from stress and trauma (p. 261).

According to Piaget (1962), interacting with an animal can involve comprehensive interactions where a child learns about "action schemas or the child's ability for mental representation." In play with a companion animal, young children can further understand their experiences in the world around them and the people in it (Grandgeorge et al., 2012, p. 7).

Melson (2003) agrees that young children have positive responses in early experiences with companion animals, such as pets. Much of a child's first years are filled with animals through imaginative play and real-life interactions. Laughter and excitement are easily and often heard from young children when playing with a stuffed animal. Triebenbacher (1998) shares that a stuffed animal is handled and hugged while being carried around. This can give a young child a sense of comfort and security as they grow and explore, especially when feeling sadness, anxiety, or pain. In children's books and animation, animal characters in the stories are a natural attraction in the social, emotional, and cognitive growth of a child. These experiences with animals capture the beginning of imagination and emotional attributes which in turn enhances attachment, sensory input, and empathy. Melson (2003) explains how children compare animals

to themselves as friends or peers, making it even easier to learn empathy from an animal interaction than a human one. Walsh (2009b) states the most promising effect from animals is the capability to create a secure attachment. This attachment is enhanced through touch and nonverbal communication which regulates a “sensory attunement of feeling states” (Walsh, 2009a, p. 471).

Walsh (2009b) states it is because of trauma experienced from human relationships that children have difficulty in attachment. Becker (2002) agrees that this can bring “a closer connection with animals than with the humans in their lives.” There is also empathetic reasoning and recognition of abuse in rescued animals with which children can connect to “their suffering, their good heart, and their potential.” So, in interacting with and grooming an animal, young children are able learn resilience and relate responsively to another living being (Walsh, 2009a, p. 472).

In other research, by Esposito, McCune, Griffin, & Maholmes (2011), the interactions with animals and children can be a shared connection which enhance “psychological health and well-being.” These interconnected bonds are all part of anthrozoology or the human-animal interaction (HAI). HAI proposes a theory, as Kruger and Serpell (2010) agree, on how humans enjoy the comfort and surroundings of animals, finding solace in social responses and interactions (O’Haire, 2013, p. 1606).

### **Purpose Statement**

It was the purpose of this study to examine Animal Assisted Intervention (AAI), as a meaningful and potential approach to heal trauma in young children. Trauma symptoms include difficulties with emotional regulation, neurobiological dysfunction, and absence of trust in communicating experiences. Firmin, Brink, Firmin, Grigsby, & Trudel (2016) state that Animal

Assisted Therapy (AAT) and AAI can, possibly, provide young children an opportunity to engage in meaningful play activities that create settings for guidance, routine, empathy, secure attachment, and positive sensory input. Other benefits can include self-control, stability, autonomy and awareness, socially acceptable behaviors, and muscle relaxation.

### **Aspects on AAI**

Animals can provide an alternative and complementary therapy for young children who have experienced trauma. According to Cain (1985), “An animal can enhance communication and reciprocity allowing active joint attention within individuals and caregivers” (Grandgeorge et al., 2012, p. 1).

Socially, animals have abilities within their biochemistry that allows them to perceive social interactions and provide responses. Cognitive researchers Gelman and Spelke (1981) found this provides a rationale to why there is appeal with humans on animals. Poulin-Dubois, Frenkiel-Fishman, Nayer, and Johnson (2006) further note on the capabilities of animals as animates who can “know, perceive, learn, and think.” Much of what we know about animals is their ability to repeatedly gather attention which can distract a child from their uncomfortable emotions. This is also described in a study by Brickel (1982) and Odendaal (2000), who researched this as an “attention-shift theory,” in which a child can calm any anxiousness by engaging in activities and/or interacting with an animal. The theory proposes how animals can “become a source and a center of attention” giving rise to possibilities that focus on objectives needed for learning and growth. The interactions and attention between a child and an animal can be an exchange of intentional behaviors influenced by the other’s responses and feelings (Grandgeorge et al., 2012, p. 5).

Early behaviorists, Filiatre, Millot, Montagner (1986) and Millot, Filiatre, Gagnon, Eckerlin, & Montagner (1988), believe this engagement is a partnership between an animal and a human creating a close bond of open influence. Authors, Redefer and Goodman (1989) as well as Martin and Farnum (2002), state the behaviors of animals are more attuned to understanding and to learning than humans. Blue (1986) observes this can create a positive atmosphere which in turn can enhance child, caregiver, and family cohesiveness. Cain (1985) agrees as an increase in HAI gives quality to all individuals, it also promotes interactions within inclusive familial structures (Grandgeorge et al., 2012).

According to Friesen (2010), Boris Levinson, a child psychologist, first established observations of possible animal assistance during therapy sessions in the 1960s and 1970s. While he was providing therapy for a young child his dog was present in the room. He observed how much calmer the child became, and more open to communication about emotions in the presence of an animal.

There can be any variety of animals that can help in the assistance of healing for children with trauma experiences. Chandler (2012) reports that “any spectrum of animals that can be used in therapy range from dogs, to horses, to fish, birds, cats, and a variety of small mammals.” In first using animals as therapy, Altschiller (2011) and Vredenburgh & Zackowitz (2011) recommend following the American Veterinarian Association’s guidelines and their standards for using only gentle and trustworthy animals for interventions with children. Further studies on using animals in therapy by Selby and Smith-Osborne (2013), who stress that animals can help children to lower their stressors and fears associated with posttraumatic stress disorder (PTSD). It is possible through the support of AAT, that children can learn coping skills and positive ways to express their emotions (Firmin et al., 2016, p. 204).

Animal use appears to be therapeutic and reduce stress. Beetz et al. (2011) conducted a study sample of 31 boys with insecure attachment. The children were observed and tested on stress response during classroom activities in which they were to speak aloud in front of others. Providing each boy contact with a dog before and after the activity reduced stress responses. These results were provided by salivary samples and oral self-reports (Boyer & Mundschenk, 2014).

Firmin et al. (2016) state that the possible effects of AAT, as an intervention, includes learning positive behaviors and resilience from new skills. Through the interaction and care of animals, children begin to learn gentle and caring behaviors. Trust is easily attained as animals give freely of their trust to children. This is reciprocated as children learn they can trust an animal. As a result, children are more able to trust themselves. Connecting with an animal creates a nurturing human-animal connection allowing children to begin to trust others as well. Through connections, children learn how their emotions affect animals and how they may also affect other people in their lives. Empathy is then learned and associated with feelings children have for the animals, who may also be experiencing anxiety and fear. The connection created may sometimes be the only attachment a child may first be able to handle after experiencing trauma.

According to Firmin et al. (2016), the other positive to AAT is the motivation of children wanting to be with animals in the outdoors. As with horses and dogs, the settings are more popular in the outdoors where interventions can be applied. This builds children's capabilities in other settings with new experiences, giving them freedom to express themselves (Firmin et al., 2016). The openness in these new surroundings also gives a child an ability to create open communication with an animal and humans.



## **Attachment and The Brain**

Attachment theory is a leading approach on proving therapeutic success with AAI. A prominent children's researcher, Allen Schore (2001a, 2003, 2005, 2009), asserts how the right brain is where attachment and "affect regulation" are processed in relation to an infant's ability to connect to another human being. This connection in the limbic system is where emotions are engaged. It is in this critical period of growth that interactions positively or negatively affect an infant's development. It is through trauma or other "dysregulating interpersonal affective experiences" that put pressure on a young child's mental health and the ability of growing functionally (Geist, 2011, p. 245).

In another study, Siegel (1999), states an insecure attachment can disrupt connections in the limbic system's overall components and emotions. This disruption "creates an unorganized state of mind." This inorganization rhetorically disrupts "a child's affect regulation," all of which affects a child's ability to regulate emotions. This can result in recurring and ongoing anxiousness which can upset the balance of fear and happiness and a sense of self (Geist, 2011, p. 246).

Animals have the possibilities to enhance emotional regulation needed to grow. In early inquiries by a pioneer of animal studies and humans, Levinson (1969) believed in the human-animal bond of attachment as most critical for attaining growth. In review of his research, others have come to similar conclusions. Researcher Stuart-Russell (1997) proposed similar findings:

From conception, areas of growth and development are organized around stress. In infancy the period of separation-individuation is stress laden. Its resolution leads to development of resources to be kept in the ready for future stress needs. During this stage a child's attachment to an animal can serve as a transitional object that makes stress manageable. The relationship will reduce high stress levels that can induce unproductive patterns of regression to an earlier developmental stage. It can mediate oppositional stressors that are acting in unison to paralyze developmental movement. (p. 1)

And so, in Levinson's and Russell's work, all understanding points to the assumption that animals in the lives of young children impacted by trauma can enhance healing and progressive brain growth. Using animals to assist in lowering stress so a child is open for recovery is a viable alternative applying "synchrony and therefore self-awareness," and effectually, resilience (Geist, 2011, p. 252).

As an example, by Schore (2003), positive affect is accomplished through happy and positive experiences between a child and a caregiver. Positive affect releases biological hormones in the growing brain in connection with "social interactions and attachment." So, an animal can produce a similar response through the playing or chasing of a toy alongside a child experiencing stress. A child may respond with a smile or laughter, only increasing the interaction response of the animal. This reciprocity, "mimics the right-brain-to-right brain interaction that promotes social bonding and attachment" (Geist, 2011, p. 253).

Posttraumatic Stress Disorder (PTSD), is defined as "the result of prolonged exposure to stress and threat resulting in a decreased ability to cope with stress" (Fogel, 2009, p. 613). PTSD can create difficulty attaching or bonding and the ability to regulate emotions. Klorer (2008) explains how "traumatic memories are stored in the right hemisphere of the brain, making verbal expression of these memories difficult." And further, Rauch et al. (1996) details that through imaging such as PET scans of the brain, when an individual with PTSD recollects moments of a traumatic occurrence, the brain reacts as follows:

The language area of the left hemisphere of the brain turned off while there was heightened activity in the right hemisphere of the brain, (right amygdala, areas of temporal and frontal cortex, and right visual cortex.) This suggests a neurobiological explanation for the difficulty patients with PTSD have in verbally relating their traumatic memories although the memories themselves trigger a physical feeling of re-experiencing. (p. 254)

It is so important to understand the connection children and animals can share. Animals are non-verbal and can mirror emotions and behaviors. They can create a moment of eye contact, a beginning attunement and hopefully, an attachment (Geist, 2011, p. 254).

Another theory approach on sensory integration by Ayres (1972) is on neuronal and behavior research. It applies how animals may enhance connections in a child's brain by stimulating new patterns of growth. Through neuronal plasticity the brain can attend to organized patterns. The patterns of the brain are acquired through new and varied experiences. The brain does not have a previous path for patterns and is strengthened through new experiences and connections. Through interactions, Van Der Heide, Fock, Otten et al. (2005) describes how our brains create these neuronal patterns, each different and diverse, all within the brain. In creating patterns, the neurons can signal interactions among our thoughts and actions. It is plasticity and new brain connections that give an ability in learning and growth through "multisensorial stimulation" in AAT and AAI. This theory suggests that these neuronal patterns and connections "allow the learning of new skills for functioning in the world" (Granados & Fernandez, 2011, p. 194).

Scott (2005) states interactions with an animal can positively impact the brain, in which endorphins are released and increase happy and feel good emotions. Not only is well-being attributed to an animal interaction, but a sense of confidence is gained. An analyst, Barker (1999) studied the effect of hippotherapy on young children experiencing sadness and distress. Barker (1999) analyzed a study using hippotherapy during a 6-week program on 5 grieving children. The children were ages 4-14. His study found, that in using horses as an intervention with young children, an attachment was created. According to Barker (1999), attachment to a horse also

coincided with positive social emotions and behaviors. The qualities of this connection were, “mutual trust, respect, empathy, unconditional acceptance, sense of constancy, security, reliability, love and affection, sense of autonomy and initiative, and self-control” (Granados & Fernandez, 2011, p. 194).

Bachi (2012) also found this to be true in his studies on AAI. Children emotionally respond to a horse, in which a nurturing intimate bond can be formed, allowing for the child to gain attachment, love, familiarity with another living being, and an emotional expression of self. He believed that much of what can be learned through interacting with a horse or another animal, is like opening the window to a child’s mind and heart, so that he or she may grow.

### **Social and Emotional Growth**

Researchers believe that animals can increase social and emotional expression in their accompaniment. Beck and Meyers (1996) reason on how animals can increase the presence of verbal occurrences in a child. They note this is because the presence of an animal is a primary attention in a child. How a child interacts and communicates to an animal, per Britton (1991) can enhance social responses and interactions with human beings. A relationship is created in caring for and grooming an animal. This relationship begins to regulate a child’s emotions by normalizing brain patterns trauma had affected as an unorganized thought process (Granados & Fernandez, 2011).

Similarities in animal and human characteristics are common. Katz (2003) researched how dogs can have “complex thinking and feelings and have acute sensory perception.” Also, biological anthropologists show how dogs can easily understand “human physiological cues and behaviors, such as hand gestures and glances.” Other reports from Kirkness et al. (2003) relate how a dog’s brain and body cells conform in similar attributes to humans. Genetically, dogs are

like humans “surprisingly with a 75% overlap” of similarities. Socially, dogs are important to our human condition. They can give responses within their own characteristics, that can encourage and engage positive emotions and health in humans. Their “ability to understand and communicate” in numerous social aspects makes them important alternatives to secure attachment and well-being (Walsh, 2009a, p. 469).

AAT, especially with dogs, as observed by Anderson & Olson (2006) can give an unconditional amount of love and friendship to a child with trauma. In a study by Prothmann, Bienert, & Ettrich (2006) findings reflect on how much there is to gain in having a companion animal. The enthusiasm an animal shows can in return increase positive social-emotional responses (Friesen, 2010). Friesen (2010) states that they can form appropriate emotional and social care as it is “outside the complications and expectations of human relationships.” Cats can also be considered a wonderful possibility for AAI, as a cat’s small stature and home access are easily accessible in therapy and can have the same positive effects (Boyer & Mundschenk, 2014, p. 29).

Horses can be another alternative in healing. Bachi (2012) observes that children may benefit, as well, from equine-facilitated psychotherapy (EFP). The care and characteristics of a horse, in connection with psychotherapeutic goals, can apply care on a child’s emotional responses from stress or trauma. EFP can help in emotional integration through interactions and activities with a horse, particularly when a child is emotionally disconnected from stress related trauma. This is secularly opposite of horseback riding and therapeutic riding (TR) in which riders learn about horses and engage in therapy for speech or physical impairments. EFP is a therapy through observation of horses, in which children learn how to understand the emotions of the horse and appropriately understand those same emotions internally. This understanding as seen

by Bachi, Terkel, and Teichman (2012) clearly affects how children can regulate those same emotions, as if looking through an inner window (Bachi, 2012).

According to Bachi (2012), self-esteem and self-concept are concerns for children who have had adverse or traumatic experiences. Equine-Assisted Activities and Therapies (EAAT) is another alternative approach, in which children are provided with emotional and cognitive support through physiological activities and movement of the body. This therapy supports healing all aspects of a child's growth.

Some medical research promises similar benefits of animals used in hospital patient recovery. In their research, Cole, Gawlinksi, Steers, & Kotlerman (2007) report on a study by The American Heart Association. The study reflected on how the presence of an animal in patient recovery resulted in lowered blood pressure, increased balance of neurohormones, and lowered panic responses. It also found that even a small amount of interaction with an animal gave a reasonable and elaborate response to physiological and psychological health (Bachi, 2012).

### **Concerns of AAI**

O'Haire (2013) states in all areas of AAI, it is important to consider the child's ability or interest in an animal. Some children may be afraid of some animals, have a severe incapability and are unable to safely interact with an animal. An animal and a child can benefit from interaction only if they are able to connect with each other and form an attunement, attachment, or bond. This is important for any AAI to lower stress and facilitate healing.

Caregivers, handlers, instructors, and interventionists note it is important that safety precautions are implemented for interactions with an animal and a child. Safety should be taken to reduce effects of allergies, bites, or falls from animals. It is important to have appropriate

grooming and vaccinations for health of an animal. Children also need to wash hands after engaging with an animal. If allergens are a health issue, it can help to change settings or animal type. Jalongo (2006, 2008) emphasizes young children learning how to approach, handle, interact, and play with an animal. This consists of using gentle care and empathy before and during AAI. Hippotherapy and horseback-riding can include physical endurance, so a child's health needs or abilities should be evaluated before any contact with a horse. AAT analysts, Johnson, Odendaal, & Meadows (2002) found that settings are safer if instructors and handlers establish early protocols and procedures in interactions and activities with animals and children. Also, interventions should outline process, activities, and goals before establishing a program with a child. And with any animal program there can be no isolation between animal and a child without the presence of a handler or adult. Notification and consent are also a priority before HAI can begin (Friesen, 2010).

Care for animals is also important. According to Friesen (2010), the animal's health needs to be monitored while in use in therapeutic programs. A handler should make sure the animal and child have been introduced prior to the program to create a familiar relationship. Appropriate accommodations need to be established for an animal. This includes food and water, a safe environment, and rest or removal with signs of stress. Signs of stress can be exhibited by shaking, descended ears, and/or excessive grooming.

Cost is also a factor when choosing a type of animal for intervention. Programs such as hippotherapy have considerable costs regarding location, nutrition, health, and equipment (saddle and gear) (Friesen, 2010).

## **Summary**

Friesen (2010) reports that AAT and AAI are alternative and complementary programs that include structured goals and objectives which apply therapy to the individual needs of a child with trauma. Therapy or service animals can assist in home or facilities where special requirements are needed to ensure the health of the animal and the child. Training and introduction are important for use of animals with a child, as this promotes ease of interactions and a calm setting. Animals provide an open relationship with a child which can enhance emotional regulation, social initiations and responses, support and trust. Because of the calming effects and non-judgmental characteristics of animals, children can reduce anxiety and learn and grow in their home or school settings.

## **Overview of Findings**

In the studies I researched, even though the well-being of children was enhanced through the calming effects of animals and ability to form attachments, the studies lacked reliable or valid credibility in reporting these findings. Any epidemiological (medical) studies listed were only for personal contact with animals. This is still a main issue with researchers and social acceptance for AAI or AAT.

In accordance with Beck and Katcher (1984), "AAT studies have common problems; however, including small sample sizes, unavoidable nonrandom assignment of treatments, necessary nonblinding of the intervention, and outcomes that may be subtle, transitory, or delayed." Barker and Wolen (2008) report there are increased skepticism that comes along with the popularity of AAI, and if researchers will ever be able to "develop a clear hypothesis and improved experimental design." A majority of research studies on AAT, Barker and Wolen (2008) conclude are conducted in hospitals. According to Braun, Stangler, Narveson, &



Pettingell (2009), Havener et al. (2001), Kaminski, Pellino, & Wish (2002), Nagengast, Baun, Megel, & Leibowitz (1997), and Sobo, Eng, & Kassity-Krich (2006) also found that these are only “attempts to mitigate anxiety or pain in the hospital setting” (McCardle et al., 2011, p. 46).

According to Bachi (2012), attachment theory proposes the most reliable outcomes for engaging the senses, increasing awareness, and social-emotional growth. AAI can be a possible accompaniment to creating a human-animal bond that increases responses for human attunement and/or attachment or both.

Many theories were represented in my research on promoting various possibilities for growth and healing with the use of animals. As Granados & Fernandez (2011) puts it most theories shared the common approach that animals can positively affect early development and neuronal plasticity in brain growth, which gives AAI a consideration as a viable alternative. However, more studies need to be done.

As research has continued to grow in this field, more attempts at descriptive criteria are being established because of the possible benefits of AAI. The health impact animals can possibly make regarding psychological, emotional, and physiological gains with children, make it a viable alternative and complimentary therapy in healing and growth (Walsh, 2009a). AAI and AAT research are being refined to promote “more meaningful and beneficial ways” to incorporate effective, competent, and functional modalities and goals (Boyer & Mundschenk, 2014, p. 37).

Anderson & Meints (2016) establishes that current AAI research needs to address concerns of descriptive observations, methodological practices, and standardized tools to accurately determine if animal interventions and therapies are affecting a child’s development

and healing from trauma. This is critical in addressing the specific needs of a child and caregiver goals.

Researchers struggle with aspects of theory and proving validity or reliability. Much more detailed data is needed in studies of animal and human interactions to determine objectives, variability, and developmental outcomes (Geist, 2011). It is also necessary to observe the research long term to determine if progress is retained and remains consistent with any settings in a child's life (Anderson & Meints, 2016).

According to O'Haire (2013), currently, only caregivers are the most common resource for AAT data, using survey's and questionnaires in evaluation of their child's growth and healing progression. Also, careful guidance and practices should be considered on caregivers' evaluations of actual gains in social, psychological, or physiological well-being. As caregivers may, unknowingly, feel bias in hoping for change.

Critical to this field of therapy are manuals as an importance in generalizing skills, characteristics, and outcomes for animal interactions and development. Currently, most of the research findings are based on anecdotal information. Importantly, researchers would like a protocol that can guide objectives in response to AAI (Granados & Fernandez, 2011). If criteria could be created through empirical reliability and validation, it could aspire to increase the use and support of AAI in response to children with challenges in growth patterns (O'Haire, 2013).

As an early childhood educator, I think the approach of animals can be a natural alternative in complementing any services, psychotherapy, or counseling, in a child's recovery from Adverse Childhood Experiences (ACEs) and trauma; however, it should not be the only therapy.

Any animal can possibly instill in a child, compassion, courage, and connection. Hopefully, also resulting in attunement and ultimately, attachment. I strongly believe animals can be a natural therapy for children with trauma. If interaction with animals can increase trust and open communication, lessen feelings of isolation and suffering, and create a supportive relationship, then as educators we need to give it a chance.

### Chapter 3: Conclusion

Firmin et al. (2016) supports that an alternative approach to recovery in trauma and children is AAI. It is shown to apply changes within the physiological, emotional, and neurobiological growth in children. It is a natural response regarding therapy for children with trauma or adverse experiences.

HAI can improve relationships, as it comprehensively changes the outcomes of stress and well-being. It can inhibit stress reactions and enhance positive mood abilities, intrinsic capabilities, and enthusiasm. There is much to also be hopeful for, as Law and Scott (1995) claim how with structured animal intervention by another, such as an animal handler, can progress changes in lowered sensory fields and anxiousness and open social abilities (O’Haire, 2013).

As a psychologist in the field of AAT, Boris Levinson (1969), had much propaganda surrounding his research in respect of animals in therapy. He believed another option for the treatment of mental disorders was important, to relay some of the costs of sessions and change ineffective attempts to help a child open to therapy. He asked for consideration in the following statement to colleagues, “Since the problem of mental disorders in children is so vast, any plausible measure that promotes diminution deserves investigation and testing” (Geist, 2011, p. 254).

O’Haire (2013) states animal handlers, caregivers, and health professionals instructing AAI with a child, should learn appropriate procedures on animal care, safety procedures, and specific criteria for growth outcomes. Standards can be addressed and administered in animal programs by proper certification as a handler or interventionist.

One final thought; as Melson (2001) declares, animals may give children a calming effect even though animals are not able to understand them. This can give children “the feeling of being heard and being understood” (Friesen, 2010, p. 266).

#### **Chapter 4: Position Statement**

As an early childhood special education instructor, I think I have a responsibility to help a child with trauma symptoms by considering the needs of the whole child. The research on how animals can affect our social-emotional abilities and enhance our relationships through their calming affects was the most prevalent outcome with animals. And how the connections animals can make with a child can increase the chances to regain attachment. This is the most aspiring and hopeful beginning in meaningful interactions and healing from trauma. In early intervention and/or a classroom, I think it is possible to start small and consider the use of a companion animal as therapy. AAI along with caregiver guidance, goals and objectives can enhance an already structured approach intervention.

Secondly, I learned there is much needed emphasis on research to determine a standardized measure in physiological and psychological changes to prove methodology. This so far has proven challenging, as animals are not capable of verbal communication and children are characteristically and biologically unique. Inclusion with animals also can require another challenge, as there are numerous kinds of therapy animals with varying personalities. Another consideration is acquirement of an animal, access to an animal, a child's possible fear of animals, and locations for large animals. As a supplement for children coping with trauma, the cost of an animal can include home care or facility therapy sessions. However, it may be considerably lower than psychotherapy sessions.

Lastly, in my study I also learned that human beings' awareness on the importance of animals can often be lost regarding how much they can learn and teach us. AAI is still a therapy that is considered unmethodical from a professional health care and academic standard. However, an open-minded approach to animal use can inspire a special education program.

Animal use can possibly enhance growth and appropriate behaviors and by adapting activities to developmental criteria can support healing. So, even though there is a lack of methodological standardized criteria for AAI, the smiles on children's faces as they engage with horses, dogs or cats can possibly provide positive support with their emotional anomalies.

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