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The Effects of Trauma on Early Childhood Development/Building Resilience and Repair in Children after Trauma

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Building Resilience and Repair in Children after Trauma

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Adrianna Evers

Starred Papers

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree

Master of Science in

Child and Family Studies

December, 2018

Starred Paper Committee:
JoAnn Johnson, Chairperson
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Table of Contents

List of Tables

Chapter 1: Introduction

Children are vulnerable and innocent, making them susceptible to physical or emotional harm. As an Early Childhood Special Education teacher, I am surrounded by young children who have experienced a variety of traumatic events throughout their young lives. Many of these children have been exposed to toxic substances prenatally, physical abuse or witness to domestic violence, neglect, or traumatic medical experiences.

According to the National Survey of Children's Health (NSCH) (2011/12), approximately 50% of children experience at least one traumatic event (Stone & Bray, 2015). Twenty-six percent of children experience two or more traumatic events by the age of 4 years, and some children experience multiple traumatic events and a chaotic home life (NSCH, 2011/12). Children's first years are the most important in terms of development. In these early years, children develop skills at a rate that exceeds development in any other stage in life (National Research Council Institute of Medicine, 2000).

In order for children to learn new skills, develop, and think clearly, their physical and mental or emotional needs must be met. Children rely on their adults to meet all their basic needs. Adults are responsible for providing children with nutritional food, water, clothing, exercise, immunizations, and a safe living environment in order for them to be in good physical health. Adults also need to provide children with unconditional love, self-confidence and high self-esteem, opportunities to socialize with peers, supportive and encouraging adult figures, safe and secure surroundings, and appropriate guidance and discipline (Mental Health America, 2017). Once children's basic needs have been provided for, they are able to learn and fully experience and process their environment and the materials around them.

The purpose of this paper was to review research literature on how trauma and traumatic events impact early childhood development. If children experience trauma early in life, will their development be impacted? Fortunately, infant mental health and early childhood mental health are at the forefront of early childhood research to discover if and how trauma impacts development.

Overview of Early Childhood Development

Early childhood is considered to be the years between birth and 5 years of age. In these years, "A child develops... from a single cell, fertilized egg, into a walking, talking, thinking, learning, and loving being" (Perry, 2002). Children work on a variety of skills in motor, communication and language, social and emotional, cognition, and adaptive developmental domains. All areas of development are interlaced and are the foundation on which subsequent skills are built (National Research Council Institute of Medicine, 2000). Children develop at varying rates, but typically with uniformity and in predictable developmental sequences (i.e., rolling over, sitting up, pulling to stand, cruising, walking, etc.). Educators, medical professionals, and parents use developmental milestones to mark where children are in terms of development and to ensure children are developing at an acceptable rate and in a typical sequence. Table 1 shows common developmental milestones.

Table 1

Basic Developmental Milestones (Help Me Grow MN, 2015)

Overview of Developmental Milestones			
At 3 Months ● Turn head towards light ● Respond to loud sounds ● Grasp rattle or hair ● Lifts head & chest while on stomach ● Smiles and coos	**At 6 Months** ● Follows moving objects with eyes ● Turns toward sound ● Reach for object ● Roll from stomach to back ● Recognize familiar faces	**At 12 Months** ● Sits without support ● Pull to stand ● Crawls on hands and knees ● Drink from cup ● Enjoy peek-a-boo ● Put objects in container ● Knows 5-6 words	**At 18 Months** ● Pull, push & dump things ● Follow simple directions ● Feed self ● Make marks with crayons ● Walks without help
At 2 Years ● Use 2-3 word sentences ● Carry object while walking ● Feed self with spoon ● Play independently ● Identify body parts	**At 3 Years** ● Walk up steps ● Ride a tricycle ● Open a door ● Turn one page at a time ● 3-5 word sentences ● Name one color ● Use toilet	**At 4 Years** ● Jump from step ● Dress or undress with little help ● Cut straight with scissors ● Wash hands alone ● Play simple games ● Give response to basic questions ● Give first & last name	**At 5 Years** ● Catch a large ball ● Bathe self ● Dress alone ● Speak clearly ● Count 5-10 objects ● Print a few letters in name ● Copy familiar shapes

Historical Background of Infant and Early Childhood Mental Health and Child-Rearing Practices

The Zero to Three: Early Connections Last a Lifetime (2016) website defines infant-early childhood mental health as "Infant-early childhood mental health (I-ECMH) is the developing capacity of the child from birth to 5 years of age to form close relationships, manage and express emotions, and explore the environment and learn." According to Lieberman (1998), there are five principles that define infant mental health. These five principles are: "(1) Infants are social organisms who exist in relationships, most of which are dyad specific; (2) individual differences are an integral component of the infant's functioning; (3) every infant exists in a particular environmental context that can substantially influence the person's functioning; (4) infant mental

health practitioners make an effort to understand how behaviors feel from the inside, not just how they look from the outside; and (5) the intervener's own feelings and behaviors have a major impact on the intervention."

There have been a variety of child-rearing patterns throughout history. Prior to the middle ages, children were viewed as an evil that had to be controlled. During this period, children and parents were considered to be the same person but the adult having a soul and the child not. An easy way to control the child was to permanently remove the evil, or kill the child, making this mode known as the infanticidal mode. Scholars from this era encouraged such practices as a way to effectively deal with an immoderate amount of atypical children. Around 400 A.D. the church and law considered it to be murder when an infant was intentionally killed. Although it was frowned upon, infanticide continued into the 19th century.

The abandonment mode occurred between the 4th and 13th centuries. Instead of killing a child for being evil, which was no longer as acceptable as was previously, parents distanced themselves from their children in a variety of ways. Some of these distancing methods included being: "sold into slavery, sent to a wet nurse, the monastery or convent, to foster families, to the homes of nobles as servants or hostages, or by extreme emotional abandonment at home" (McKerrow, 2003). Although not as common, some of these methods continued into the 18th century.

The ambivalent mode took place from the 14th to 17th centuries. During this time, child-rearing was viewed as being able to physically control a child. Infants were swaddled extensively, to the point of wearing through the skin, forming pressure sores, and developing brachycardia (slow heart rate). As children grew older, caregivers would control children

through beatings and other forms of physical abuse such as being forced to purge or given enemas to expel the inner demons.

The intrusive mode took place around the 18th century. During this mode, researchers and society viewed the environment as having considerable importance on later development. In this era, society no longer viewed children as dangerous or evil and became empathetic toward them. Physical abuse decreased and pediatrics and manuals on child-rearing emerged. Improving child care and decreasing infant mortality was a strong focus during this time (DeMause, 1974).

The socializing mode began during the 19th century. The focus during this mode became one of training a child rather than controlling them. This meant caregivers were to guide and socialize their children. During this time, fathers started becoming positive participants in their children's development.

The last mode is referred to as the helping mode and began in the 20th century. Parents and children work together to identify and fulfill children's needs. Parents and caregivers support and guide children in their development by interpreting emotions, interacting and playing with children, and providing them with stimulating and age appropriate experiences to promote learning.

Historical Background of Infant Mental
  Health Theorists

The following researchers explored Evolutionary Theory and Infant Mental Health with a focus on adaptive behavior: Arnold Gesell (infant assessment), Mary Shirley (development of motor), and Myrtle McGraw (twin studies and motor behavior). William Kessen researched visual processing, Lewis Lipsitt researched sensory processing and operant learning, Yvonne

Brackbill researched psychophysiology of learning, Frances Graham researched psychophysiology of attention, Wendell Jeffries studied attention and habituation, Robert Fantz looked into visual processing of social stimuli, and Jerome Kagan researched attention and cognitive processing. Other main theorists in infant-early childhood mental health are displayed in Table 2.

Table 2

Infant Mental Health Theorists (Fitzgerald & Barton, 2000)

THEORETICAL APPROACH	THEORISTS	PRINCIPLES OF THE THEORY
Systems Theory	Ludwig von Bertalanffy, Urie Bronfenbrenner, Inge Bretherton (control systems)	Child's environmental systems must be assessed to determine how connected a child is with its' community and resources
Psychoanalytic Theory	Sigmund Freud (Biology) René Spitz Selma Fraiberg Erik Erikson Margaret Mahler	Declared infancy as a vital stage to form personality and emotions based on biological elements. Formed infant psychiatry Personality derives from historical and cultural past. Personality is not fixed. Sense of self as a separate being

Overview of Child Protection

One of the first documented cases of child abuse taking place in the United States occurred in April, 1874, in New York. Ten-year-old, Mary Ellen Wilson (Connolly), who was being physically abused and neglected by her adoptive mother, was discovered by Etta Wheeler, who was visiting her neighbor. Mary Ellen Wilson's neighbors could hear her getting beat daily by her guardian and turned to Etta Wheeler to help Mary. Etta Wheeler reached out to Henry

Bergh, the founder of the American Society for the Prevention of Cruelty to Animals (ASPCA), the only organization she thought could help Mary. Bergh was able to get Mary removed from her abusive adoptive mother within 48 hours of Etta making the report. Investigation revealed that Mary was getting regularly beat with a horsewhip and a variety of other objects such as scissors. Mary suffered from severe neglect and was malnourished. When Mary's guardian left her she would always lock her in a room and she was never allowed outside of the apartment. This case led to the creation of the Society for the Prevention of Cruelty to Children (SPCC) in 1876 (Markel, 2009).

Prior to World War I (WWI) and the Great Depression, acts were drafted by the New York SPCC to prevent baby farming and the padrone system (contract labor). During this time, child labor laws were a focus as well as the creation of temporary homes for displaced children. During WWI and the Depression, money that supported these agencies, disappeared. The profession of social work developed during this time and the Social Security Act of 1930 passed, providing services for neglected, abused, and at-risk children. During this time, the focus moved away from child advocacy and was put on family and tertiary prevention. This movement was aimed at repairing the family and keeping the abused child with their family.

Although, social work was eager to protect children and families, the medical profession did not recognize child abuse until the 1950s. John Caffey, professor at Columbia University and pediatric radiology, discovered that multiple bone fractures and repairs throughout their healing could be seen on X-rays. Frederic Silverman, Henry Kempe, and John Caffey agreed that reappearing fractures are mostly likely due to parent-inflicted injury and early identification

of abuse may be life-saving for children. A name of "battered child syndrome" was given to symptoms that included multiple fractures, bruising, and subdural hematomas.

Throughout the 1960s and 1970s, injustices of all kinds were brought to the forefront. Along with abuse of women, people of color, disabled, geriatric, and those of low socioeconomic status, abused and neglected children were rediscovered and became a large focus in communities and in media. During this time, social workers not only focused on physical abuse of children but also emotional abuse (Rosenheim, 1979).

In 1962, the U.S. Children's Bureau drafted legislation on child abuse. In 1963, Children's Division of the American Humane Association recommended suspected child abuse concerns be sent to child protection agencies. During this year, 11 bills to protect abused children passed. In 1967, all U.S. states passed child abuse reporting laws, mandating professionals to report child abuse and child injuries. The Child Protection Act was proposed in 1973, and provided funding for the "prevention, identification, and treatment of child abuse and neglect" (U.S. Advisory Board on Child Abuse and Neglect, 1991).

The following section reviews brain development, starting in utero and progressing through adulthood. Trauma and the effect of trauma on brain development is examined in the subsequent section.

Overview of Brain Development

The brain develops according to genetic and environmental cues. Nature, nurture, and the effects of stress and trauma impact brain development (Anda et al., 2006; Perry, 2004; Perry, 2009; Stone & Bray, 2015). The brain undergoes multiple stages of development, with neurogenesis being the first stage in its development. Neurogenesis begins in utero after an

embryo is conceived, with the majority of development taking place during the second and third trimester (Perry, 2002). Neurogenesis is the creation of nerve and brain cells or neurons that make connections and relay information to other areas throughout the body such as, nerve cells, muscles, or gland cells (Stone & Bray, 2015). Trauma that occurs during early childhood can prevent the development of neurons during adulthood (Anda et al., 2006).

The second stage of brain development is migration, occurring before and immediately postnatal (Beck, 2008). Migration takes place when neurons make their way to their final location within the brain (Stone & Bray, 2015). Brain function can be impacted if a child undergoes trauma during this stage, such as exposure to substances or infections, and inadequate nourishment. The body will send the little nourishment it does receive to the brain; however, it may not be sufficient to promote optimal brain development.

Differentiation is the third stage of brain development and persists throughout childhood. During differentiation, environmental cues guide brain development. "The neurons express genetic potential and specialize in the differentiation process, and for example, develop in functional brain areas or *neurotransmitters*" (Stone & Bray, 2015). The stress response the brain has to traumatic experiences during this stage of development change the neurochemical processes, neurochemical signals, and change the chemical makeup of the brain (Beck, 2008; Perry, 2002; Perry, 2008).

Another stage in brain development is called apoptosis. When there are excessive duplicates of neurons in the brain, they naturally die off or disappear (Perry, 2002). If these neurons never make functional connections or do not become activated, they die off. Synaptic pruning is another term for this process in brain development, allowing the brain to remove

connections that are no longer needed or used. This is where the saying, "use it or lose it" applies (Perry, 2002). However, if an individual experiences abuse or neglect, leaving the brain unstimulated, apoptosis increases and neurons die at a faster rate than typical (Perry, 2002).

Arborization is the process when dendrites form through connecting neurons. Dendrites are a short branched extension of nerve cells, along which impulses received from other cells at synapses are transmitted to the cell body. Dendrites are activated through sensory experiences and their density is determined by these experiences and genetics. Again, neurons will be reabsorbed if they are not used (Beck, 2008; Perry, 2002).

Axons and synapses are also formed during neuron connection in the synaptogenesis stage (Perry, 2002). While neurons are forming connections, synapses multiply by eight in the first 8 months of life. Synapses are an intersection for an impulse to pass between two neurons to allow them to communicate through chemicals such as, neurotransmitters, neuromodulators, or neurohormones. It is essential for synapses to guide information received from environmental and genetic cues in order for the brain to organize and function (Stone & Bray, 2015). According to Anda et al. (2006), if children are not provided with developmentally appropriate experiences and environments, the chance for neuron survival, successful connection of synapses, and the construction of neurotransmitter survival diminishes.

Lastly, synaptic sculpting begins. In this stage, synapses and their connections are made stronger through neurotransmitters allowing their communication between one another to become more efficient. This process allows an individual's working memory to develop and become functional. Should a child undergo trauma during this time, their synaptic connections become weak and die off (Stone & Bray, 2015). Myelination, the process of a myelin sheath

forming around a nerve allowing impulses to move more quickly throughout the brain, takes place in utero and continues into early adulthood. A synapse is used between two neurons in order to send chemical messages across the brain. Synaptogenesis is the creation of synapses between neurons and takes place throughout life.

**Overview of Trauma and Potential
  Traumatic Events**

Childhood traumatic events include: physical, emotional, sexual abuse, domestic violence, household substance abuse, mental illness in household, parental separation or divorce, criminal household member, emotional neglect, and physical neglect such as withholding food. Trauma can also result from living in an institution, experiencing natural disasters, accidents, becoming the victim of a criminal act, witnessing neighborhood or community violence, or extensive viewing of media coverage of terrorism or other national or international crises. (Centers for Disease Control and Prevention, 2016).

The Centers for Disease and Control (CDC) uses Adverse Childhood Experiences (ACEs) to measure possible traumatic events that may have lasting effects on health and well-being. "ACEs have been linked to risky health behaviors, chronic health conditions, low life potential, and early death" according to the CDC. ACEs are placed into three categories: abuse, family/household challenges, and neglect. Table 3 shows the breakdown of each category and defines each subcategory.

Table 3

ACEs Definitions

ABUSE	
Emotional abuse	Parent, stepparent, or adult living your home swore at you, insulted you, put you down, or acted in a way that made you afraid that you might be physically hurt
Physical abuse	Parent, stepparent, or adult living in your home pushed, grabbed, slapped, threw something at you, or hit you so hard that you had marks or were injured.
Sexual abuse	An adult, relative, family friend, or stranger who was at least 5 years older than you ever touched or fondled your body in a sexual way, made you touch his/her body in a sexual way, attempted to have any type of sexual intercourse with you.
HOUSEHOLD CHALLENGES	
Mother treated violently	Your mother or stepmother was pushed, grabbed, slapped, had something thrown at her, kicked, bitten, hit with a fist, hit with something hard, repeatedly hit for over at least a few minutes, or ever threatened or hurt by a knife or gun by your father (or stepfather) or mother's boyfriend.
Household substance abuse	A household member was a problem drinker or alcoholic or a household member used street drugs.
Mental illness in household	A household member was depressed or mentally ill or a household member attempted suicide.
Parental separation or divorce	Your parents were ever separated or divorced.
Criminal household member	A household member went to prison.
NEGLECT	
Emotional neglect	No one in your family helped you feel important or special or loved. People in your family never looked out for each other and felt close to each other, nor was a source of strength and support
Physical neglect	There was no one to take care of you, protect you, and take you to the doctor if you needed it, you didn't have enough to eat, your parents were too drunk or too high to take care of you, and you had to wear dirty clothes.

Research Question

The following research question guides this review of literature:

1. How does trauma impact early childhood development?

Focus of the Review

At this time, I have located six qualitative and quantitative studies related to young children who have experienced trauma. Studies were published from 2001-2017 in English-speaking countries. The research studies and articles shared in this paper discuss the impact of trauma on early childhood development and brain development.

Academic Search Premier, Education Resources Information Center (ERIC), Minitex, and PsycINFO were all used to locate studies. A variety of keywords and keyword combinations were used in these search engines: *trauma* and *child development, trauma and children, traumatic events* and *brain development, effects of child abuse and child development, child abuse* and *brain development, neglect* and *child development, neglect* and *brain development.* In addition, I have explored contents of *The Journal of Child Psychology and Psychiatry* going back 3 years.

Importance of the Topic

As an early childhood special education teacher, I work with many children and families varying in abilities, backgrounds, culture, socioeconomic status, and resources. Unfortunately, in my experiences as a special education teacher, I have averaged that at least 50% of children on my caseload, aging birth to age 4, have experienced three or more traumatic events or adverse childhood experiences (ACEs) in their short lives.

Knowledge about trauma, infant mental health, and early childhood mental health continue to evolve. As a result of this paper, I hope to determine if traumatic events and ongoing stress hinder child development and impact brain development. I want to spread the importance of infant-early childhood mental health and how, as a society, we can be allies to young children and be proactive in this area.

Definitions

Critical terms are defined in this section.

Adverse Childhood Experiences (ACEs). Direct or indirect traumatic events that include but not limited to: witnessing domestic violence, parental substance abuse, criminal activity by member of household, chaotic lifestyle, incarceration of a parent, parent mental illness (Stone & Bray, 2015).

Amygdala. Almond-shaped mass of gray matter inside each cerebral hemisphere, involved with the experiencing of emotions.

Anterior Cingulate Cortex (ACC). The frontal part of the cingulate cortex that surrounds part of the corpus callosum.

Developmental Milestones. Used to predict skills and skill development in areas of early childhood development that include: adaptive, social-emotional, cognitive, gross motor, fine motor, and language/communication (Centers for Disease Control and Prevention, 2018).

Early Childhood. Considered to be the span of life from birth to age 5 (Help Me Grow MN, 2015).

Harm. Anything that undermines a person's dignity or minimizes their worth (Evans & Vaandering, 2016).

Infant and Early Childhood Mental Health. A multidisciplinary educational and research discipline that promotes prevention and intervention programs that promote mental health of infants and young children (Zero to Three: Early Connections Last a Lifetime, 2016).

Maltreatment. Cruel or violent treatment of a person or animal.

Non-interpersonal potentially traumatic events. Do not involve the intentional acts of other person(s), and include car accidents, injuries, burns, animal attacks, and natural disasters (Briggs-Gowan et al., 2010).

Prefrontal Cortex. The cerebral cortex which covers the front part of the frontal lobe.

Stress. An individual who shows difficulties in personal relationships and worrisome bodily responses, that he or she is having a struggle and cannot cope with felt or perceived difficulties (Honig, 2010).

Toxic stress. The body's prolonged exposure to excessively high levels of stress hormones that become harmful, particularly during child and adolescent development (Shonkoff, Garner, and the Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, 2012).

Violence exposure (Family or Physical): Family-Inter-parental violence witnessed by the child. Physical-violence directed toward the child (Briggs-Gowan et al., 2010).

Chapter 2: Review of Literature

In this chapter, I review six studies over the last 17 years that examine the effects of trauma and toxic stress on early childhood and brain development. The first section of Chapter 2 presents findings regarding the outcome of toxic stress and trauma on child and brain development. A description of study participants, procedures, data analyses, limitations, and conclusions will be included in each summary. The second section discusses trauma symptoms in children that adults should be aware of and general steps to ensure children receive the help they need to work through their trauma experience.

Studies that Examine Outcomes of Trauma
  and Toxic Stress in Early Childhood
  Development and Brain
  Development

The six studies included in this section of Chapter 2 examine the effects of trauma and toxic stress on early childhood development and child brain development. These studies examine the potential damage done to a child's brain by ongoing trauma and stress. Children who have suffered trauma in their lives often times show side effects such as developmental delays in cognition, language, motor, social-emotional, or adaptive skills that could be due to neurological damage done by traumatic events.

According to the Centers for Disease Control and Prevention (2016), child maltreatment is the leading preventable cause of major mental illnesses, such as anxiety, depression, and posttraumatic stress disorder (PTSD). Thomason and Marusak (2017) evaluated changes in brain development in children who have experienced trauma and give a brief overview of brain development. For this chapter, I focused on Thomason and Marusak's evaluation of changes in brain development after it has undergone high levels of trauma.

According to Hart and Rubia (2012), neural stress pathways and emotion processing and regulation pathways are the main neural systems impacted during exposure to trauma. Thomason and Marusak (2017) reviewed how trauma impedes control of cognitive function, selective attention, and reward processing pathways. Due to neural pathways being interconnected, once one pathway is impacted by trauma or toxic stress, most likely multiple pathways will be affected and changed. The brain is in charge of regulating stress throughout the body, with the hypothalamic-pituitary-adrenal (HPA) axis receiving all the stress hormones. When the HPA receives repeat blows from stress hormones, hippocampus volumetric reduction, atrophy, and decreased neurogenesis and synaptogenesis occur.

Not only is the HPA affected by ongoing trauma, the limbic or emotional regulatory brain network is also changed. The limbic system uses the prefrontal cortex, anterior cingulate cortex, and the amygdala to respond to emotions and participate in emotional expression. Gray matter volume, the neuronal cell bodies used to control emotions, decision-making, self-control, and memory in the prefrontal cortex, have been measured at a lower volume in children who have experienced extensive trauma compared to children who have experienced relatively low amounts of trauma. The amygdala, located in the cerebral hemisphere used for experiencing emotions, is shown to be much larger in children who have experienced childhood maltreatment and chronic stress. The amygdala plays an important role in the brain as it activates the release of stress hormones and prepares the body for fight or flight responses when alerted of a dangerous condition (Thomason & Marusak, 2017). "Task-based functional magnetic resonance imaging (fMRI) studies reveal increased response in the amygdala and hippocampus in

individuals that experience early adversity suggesting that early trauma may alter neurobiological ascription of salience to emotional cues" (Thomason & Marusak, 2017, p. 58).

Thomason and Marusak (2017), along with other researchers, found that children who have undergone early traumatic adversities have reduced sensitivity to reward neural pathways. The reduction of response to reward is a key link to children having affective disorder, typically displaying itself in diminished positive affect. Neural connectivity is also shown to be impacted from extensive trauma, making it difficult for these children to process and remember information to which they are exposed.

In summary, Thomason and Marusak (2017) reviewed studies and data compiled regarding altered neurological structure and function in children who have experienced trauma and ongoing stress at a young age. The outcome of their study concluded that there are changes to the structure and function of the brain after being exposed to trauma for an extensive period of time. Thomason and Marusak recognized that research about the effects of trauma on a young child's brain is relatively new and ever-growing.

Like Thomason and Marusak (2017), Danese and Baldwin's (2017) research found that childhood trauma and maltreatment increase mental and physical illnesses throughout an individual's life. Danese and Baldwin reviewed studies showing exposure to trauma as a young child increases recurrent bouts of depression, increases the likelihood of being unresponsive to depression medication, and increases cycles of manic and depressive stages in those with bipolar disorder (Danese & Baldwin, 2017; Nanni, Uher, & Danese, 2012). Childhood maltreatment also leads to higher suicide attempts, posttraumatic stress disorder, and emotional dysregulation.

Danese and Baldwin (2017) found that childhood trauma leads to cognitive and emotional changes within the brain. Cognitive impairments from trauma can be identified in low intelligence quotient (IQ), poor memory, and difficulty planning, organizing, and completing tasks compared to children without a history of trauma. Another correlation between the Thomason and Marusak (2017) review and the Danese and Baldwin (2017) studies is the lack of sensitivity to reward in children who have endured trauma. Children who have experienced trauma at a young age may also show hypersensitivity to threat signals. Chronic activation of the hypothalamic-pituitary-adrenal (HPA) axis is found in children who have experienced trauma, leading to higher-than-average cortisol levels and heightened cortisol reactivity.

High and ongoing cortisol levels in early childhood have negative impacts on brain development, impacting areas of cognition, positive and negative affect, and physical changes in the brain. Shrinking of the hippocampus and prefrontal cortex, along with changes to the amygdala are a few physical changes that may occur due to trauma and maltreatment occurring in early childhood. Maltreatment and trauma occurring in early childhood leads to elevated inflammation levels within the body (Carpenter et al., 2010; Danese, Pariante, Caspi, Taylor, & Poulton, 2007). These inflammation levels can be measured through c-reactive protein (CRP), fibrinogen, and white blood cell count and can in turn lead to an affected immune system. Children who have been exposed to trauma early in life often display atypical eating and sleeping patterns that may also link to inflammation of the body.

To summarize Danese and Baldwin's (2017) findings, trauma and maltreatment endured in early childhood may have lasting effects on individuals. Physical changes in the brain and body, along with behavioral changes, and developmental impacts can be the cause of ongoing

toxic stress early in life. Many individuals who have experienced trauma early in life are now experiencing mental health concerns such as depression, posttraumatic stress disorder, and addiction.

Dannlowski et al. (2012) focused on amygdala responses to threat-related facial expressions using functional magnetic resonance imaging (fMRI) and an emotional face-matching paradigm. This study involved 148 healthy, right-handed, individuals. Early childhood trauma was assessed through a 25-question Childhood Trauma Questionnaire (CTQ), along with the Perceived Stress Scale (PSS) and List of Threatening Experiences Questionnaire (LTE-Q). Past research found that childhood maltreatment and trauma causes long-term changes in the hypothalamic-pituitary-adrenal axis and a variety of other structural changes including smaller brain volume, atrophy of the corpus callosum, and decreased size of the hippocampus (De Bellis et al., 1999; Heim et al., 2000; Heim, Newport, Heit et al., 2008; MacQueen & Frodl, 2010).

During the face-matching paradigm, individuals were shown a set of three faces expressing fear or anger. Individuals were told to match one of the two faces with the face shown at the top of a computer screen. A similar test was completed using geometric shapes. All responses were recorded based on accuracy and reaction time. While doing these activities, subjects' brains were being monitored using fMRI.

Dannlowski et al. (2012) hypothesized that individuals who experienced trauma at a young age would display hyper-responsiveness to negative facial expressions and reduced hippocampal volumes. Dannlowski et al. measured evidence of hyper-responsive amygdala to negative facial expressions through fMRI which can be an associated trait with anxiety,

depression, and cognitive processing. An additional finding from this study shows that a decreased hippocampal volume can be linked to individuals who experienced trauma and maltreatment as a young child, leaving them at risk for depression and posttraumatic stress disorder.

To summarize Dannlowski et al.'s (2012) findings, individuals who experienced emotional abuse and emotional neglect had stronger amygdala responses than any other category of those abused, including those sexually and physically abused. Emotional responses to negative stimuli may always be impacted from the hyper-responsiveness of the amygdala and have lasting effects on individuals who experienced trauma or maltreatment at a young age. Findings from this study conclude that trauma at a young age can have lasting physical effects on brain structure such as decreased hippocampal volume.

The fourth study to show neurological impacts on a child's brain after trauma was completed by Hurt, Malmud, Brodsky, and Giannetta (2001) in their study of psychological and academic correlations of exposure to violence in child witnesses. Hurt et al. used 119 inner-city, African-American children, 7 years of age for this study. The following assessments were used in a longitudinal study to determine a child's exposure to violence: Things I Have Seen and Heard (TISH), the Culture-Free Self-Esteem Inventory, 2nd Edition, Child Behavior Checklist (CBCL), the Parent Report Form, the Teacher Report Form, the parent versions of the Checklist of Children's Distress Symptoms (CCDS-PRV), and the CBCL Parent Report Form.

These children started this longitudinal study right after birth and were evaluated at the age of 7. Including the assessments and questionnaires listed above, children were also administered an intelligence quotient (IQ) test called the Wechsler Preschool and Primary Scale

of Intelligence, at age 6½ years. Each child questionnaire and assessment was correlated with their caregiver's questionnaire and assessment responses.

It was determined that within this group of inner-city children, those who had been exposed to high rates of violence also showed high rates of distress and low self-esteem. In addition to displaying social-emotional concerns, children who witnessed violence showed lower school competency and more school absences than those who had witnessed no violence at a young age. Many teacher and caregiver responses showed they were unaware of the effects violence had on children's distress and self-esteem.

Table 4

Correlating Violence Witnessed by Children to Academic Performance Hart & Rubia (2012)

Table 3. Correlations With TISH Total Violence Score*

	Correlation†	P Value
Levonn		
Depression	.31	<.001
Anxiety	.37	<.001
Self-esteem (CFSEI-2)		
General	-.24	.01
Social	-.02	.83
Academic	-.07	.48
Parent-related	-.13	.16
Total	-.19	.04
School		
Grade point average‡	-.29	.01
No. of days absent	.25	.02
CBCL Parent Report Form		
Competency	-.06	.61
School (subscale)	-.35	.002
Social	-.06	.56
Thought	-.13	.22
Attention	.05	.60
Internalizing	.001	.99
Externalizing	.04	.70
Total Problem score	.02	.84
CBCL Teacher Report Form		
Total Adaptive	-.19	.19
Social	.05	.74
Thought	-.02	.91
Attention	.07	.59
Internalizing	-.02	.89
Externalizing	.24	.08
Delinquent (subscale)	.32	.02
Total Problem score	.17	.22
Child characteristics		
Sex‡§	.05	.58
Full-Scale IQ	-.16	.10
Caregiver and home characteristics		
Full-Scale IQ	-.11	.30
Total Self-esteem	-.14	.14
Total HOME score	-.15	.19
Cocaine use–pregnancy‡‖	.042	.65
Cocaine use–current‡‖	.10	.29

*TISH indicates Things I Have Seen and Heard; CFSEI-2, Culture-Free
Self-Esteem Inventory, Second Edition; CBCL, Child Behavior Checklist; and
HOME, Home Observation for Measurement of the Environment.
†Pearson *r* unless otherwise indicated.
‡Spearman ρ.
§Female = 0, male = 1.
‖No = 0, yes = 1.

Lim et al. (2015) organized a study to determine if severe childhood abuse impacts error

processing in young children using functional magnetic resonance imaging (fMRI). Sixty-six

right-handed, drug-free individuals aging 13-20 years of age from south London were used for

this study. Twenty-two individuals were used in the childhood abuse group; 17 in the psychiatric

comparison group and 27 in the healthy comparison group. Using the Development and Well-

Being Assessment, a child psychiatrist evaluated every individual. A variety of assessments,

questionnaires, and interviews were used to determine psychiatric diagnoses, symptoms scores

on psychopathology, intelligence quotients, severity of abuse, and socioeconomic status. A few

of these assessments included: the Strengths and Difficulties Questionnaire, the Beck Depression

Inventory (BDI), the Wechsler Abbreviated Scale of Intelligence, the Childhood Trauma

Questionnaire, the Childhood Experience of Care and Abuse, and the Family Affluence Scale.

Victims of sexual abuse, those who struggle with drug abuse, have learning disabilities, or

neurological abnormalities were excluded from this study.

Participants in the childhood abuse group were referred through social services and

psychiatric clinics. Individuals used for the psychiatric comparison group were referred from

social services and psychiatric clinics. The psychiatric comparison group was matched with the

abuse group based upon comorbidities including posttraumatic stress disorder (PTSD),

depression, anxiety, conduct disorder, and phobia. The individuals used for the psychiatric

comparison group had no history of childhood maltreatment. Twenty-seven individuals with no

history of childhood maltreatment and psychiatric illnesses were used for the healthy comparison

group (Lim et al., 2015).

Participants were monitored with fMRI during a variety of stop tasks that require visual

tracking and withholding a motor response to a go stimulus. The baseline go trials were

contrasted with the stop trials. "Multiple analyses of variance were used to compare the main

variables of stop task performance among the three groups using SPSS, version 16 stop-signal

reaction time, mean reaction time to go trials, post-error reaction time, omission errors, and the probability of inhibition to stop trials" (Lim et al. 2015, p. 894).

Results from the Lim et al. (2015) study showed that the group of individuals who experienced childhood abuse scored higher on the BDI and Strengths and Difficulties Questionnaire than the healthy and psychiatric comparison groups. During the task performance tests, the childhood abuse group had increased error-related elevation, meaning there was a much slower response to the go trials and post-error reaction times compared to the healthy comparison group.

To summarize the study conducted by Lim et al. (2015), deficits in the brain were found, specific to function, in the childhood abuse group. The childhood abuse group showed more at risk in their responses on the BDI and Strengths and Difficulties Questionnaire than the other two comparison groups, meaning, that these children scored in a range that was low-average or below average in the assessed areas. A measurably lower IQ mean was discovered in the childhood abuse groups than the psychiatric and healthy comparison groups. "Hence, abuse victims may develop a greater sensitivity to errors as a form of adaptation to an environment in which errors frequently predict occurrence of abuse" Lim at el. (2015).

In their 2010 study, Briggs-Gowan et al. examined the link between exposure to trauma in early childhood and emergent psychopathology. As we know from the previous studies, there are measurable data showing the increased risk of psychopathology in children and adults as a result of trauma or exposure to potentially traumatic events (PTEs). Briggs-Gowan et al. hypothesized that violence exposure will have different symptomatic impacts on the psyche than

non-interpersonal events, events not involving intentional acts of other person(s), and include car accidents, injuries, burns, animal attacks, and natural disasters.

Briggs-Gowan et al. (2010) used 213 children, aged 24 months to 48 months, living with a custodial parent for this study. These participants were recruited from a number of psychiatry, developmental, and behavioral pediatric clinics and early intervention sites from northeast and midwest states. The mean age of child participants was 34.9 months. Questionnaires and a child psychiatric interview were completed by parents and standardized developmental assessments (the Mullen Scales of Early Learning) were administered to children during a 2½ hour visit either in the child's home or at a study office. The Preschool-Age Psychiatric Assessment (PAPA) and the Child Life Event Scale were used to assess child exposure to events that may be harmful or traumatizing or witness to family violence. Parents were given the Center for Epidemiologic Studies Depression Inventory (CESD) and the Beck Anxiety Inventory (BAI) to measure symptoms of depression and anxiety.

From this study, Briggs-Gown et al. (2010) found that 92 children met the criteria for psychiatric disorders, but none met the DSM-IV criteria for PTSD. Children exposed to violence were more likely to have separation anxiety, conduct problems, and association with attention deficit hyperactivity disorder. Children exposed to family violence were more likely to exhibit separation anxiety and oppositional defiant disorder. Children exposed to non-interpersonal exposures showed a higher rate of developing specific phobias.

In summary, exposure to potentially traumatic events in early childhood shows significant risk for psychopathology beginning early in life. This study found that parental affective symptoms may intervene between family violence and symptoms of depression or

conduct problems. Violence exposure was found to impact developmental functioning on a variety of levels. Briggs-Gowan et al. (2010) suggested that if a young child has experienced potentially traumatizing events, especially violence, they should be assessed for exposure and receive early treatment to prevent psychiatric disorders from occurring.

Table 5

Summary of Chapter 2 Findings

AUTHORS (DATE)	DESIGN	PARTICIPANTS	PROCEDURE	RESULTS
Briggs-Gowan, Carter, Clark, Augustyn, McCarthy, & Ford (2010)	Qualitative and quantitative data	213 children, aged 24 months to 48 months, living with a custodial parent. Participants were recruited from psychiatry, developmental, and behavioral pediatric clinics and early intervention sites from Northeast and Midwest states	Questionnaires and a child psychiatric interview were completed by parents and standardized developmental assessments were administered to children during a 2½ hour visit. The PAPA and the Child Life Event Scale were used to assess child exposure to events that may be harmful or traumatizing or witness to family violence. Parents were given the CESD and BAI to measure symptoms of depression and anxiety.	Children exposed to violence were more likely to have separation anxiety, conduct problems, and association with attention deficit hyperactivity disorder. Children exposed to family violence were more likely to exhibit separation anxiety and oppositional defiant disorder. Children exposed to non-interpersonal exposures showed a higher rate of developing specific phobias.
Danese & Baldwin (2017)	Qualitative data	Animal studies and human studies were researched.	Previous study data compiled quantitative and qualitative data.	Early childhood trauma and maltreatment leads to changes in brain structure, inflammation in the body, and higher risks of mental health diagnoses.

AUTHORS (DATE)	DESIGN	PARTICIPANTS	PROCEDURE	RESULTS
Dannlowski, Stuhrmann, Beutelmann, Zwanger, Lenzen, Grotegerd, Domschke, Hohoff, Ohrmann, Bauer, Lindner, Postert, Konrad, Arolt, Heindel, Suslow, & Kugel (2012)	Quantitative data	148 healthy, right-handed, subjects were selected for fMRI tests after being thoroughly screened by psychologists and free from any history of psychiatric disorders.	Subjects answered multiple questionnaires to assist researchers in determining the type of trauma experienced. Threat-related facial expressions using functional magnetic resonance imaging (fMRI) and an emotional face-matching paradigm was used to study amygdala responses and hippocampal volumes.	Individuals who experienced emotional abuse and emotional neglect had stronger amygdala responses to threat-related facial expressions. Trauma at a young age can have lasting physical effects on brain structure such as decreased hippocampal volume.
Hurt, Malmud, Brodsky, & Giannetta, (2001)	Quantitative and qualitative data	119 inner-city, African-American, children, seven years of age. 119 caregivers (biological and foster)	Questionnaires, interviews, checklists, and intelligent quotient tests were used to study the correlation between being exposed to a violence as a young child and psychological and academic concerns.	Children who had been exposed to high rates of violence as a young child displayed academic deficits and psychological concerns.

AUTHORS (DATE)	DESIGN	PARTICIPANTS	PROCEDURE	RESULTS
Lim, Hart, Mehta, Simmons, Mirza, & Rubia (2015)	Quantitative and qualitative data	66 right-handed, drug-free individuals from South London were put into 3 comparisons groups: childhood abuse, psychiatry, and healthy. Individuals were aged 13-20 and had similar socioeconomic status.	Questionnaires, interviews, and intelligent quotient tests were used to determine psychiatric diagnoses, symptoms scores on psychopathology, intelligence quotients, severity of abuse, and socioeconomic status. fMRI was used to measure error processing during stop-go tasks.	The childhood abuse group showed more at risk in their responses on the BDI and Strengths and Difficulties Questionnaire than the other two comparison groups. Abuse victims showed a greater sensitivity to errors as a form of adaptation to an environment in which errors frequently predict occurrence of abuse Lim at el. (2015).
Thomason & Marusak (2017)	Qualitative data.	Animal studies and human studies were researched using neuroimaging.	Previous study data compiled quantitative and qualitative data.	Trauma and ongoing stress alters the neurological structure and function in young children's brains.

Trauma Symptoms in Children and Ensuring Children Receive Help

Each child processes their world and experiences differently, including traumatic events and maltreatment. However, there are main symptoms of trauma that adults who live or work with young children should be made aware of. According to Yoches Janko Summers, Beeber, Jones Harden, and Malik (2012):

Children exposed to trauma may show the following signs:
- Re-experiencing or playing out memories of the event in verbalization, play, or behavior
- Sleep problems such as trouble falling asleep and nightmares
- Eating problems such as overeating or finicky eating
- Regression in developmental functioning or "acting like a baby"
- Withdrawal , such as talking less, avoiding interactions, seeming less joyful
- Onset of new fears

- Aggressive outbursts or increased activity level
- Increased clinginess and/or separation anxiety
- Preoccupation with the traumatic event, such as bringing up the episode in ways that are repetitious, pressured, or uncontrollable
- Increased stress (p. 82)

Yoches et al. (2012) and Masten (2014) discussed the importance of adult, caregiver, or parent involvement in a child's life during or after they have experienced trauma. Children need a consistent adult in their lives, especially during traumatic events, to assist them in processing their experiences and making them feel safe. If there is an adult to help regulate and guide a child through this time, symptoms of trauma are typically less severe. Many times it is difficult for a parent/caregiver to help a child process a traumatic event because the adult may have experienced the same traumatic event as the child and is processing their own experience.

It is imperative that adults who detect symptoms of trauma in children refer them and their families to local mental health resources that screen for trauma and offer appropriate counseling. Teachers, caregivers, or other trusted and familiar adults who are around children consistently are the best to identify changes and symptoms of trauma in children. These adults must know what symptoms of trauma look like and have resources in responding and referring children who have been exposed to trauma. For educators, some resources they should take advantage of if they identify or know children who have undergone traumatic events are the school psychologist, counselor, social worker, and family advocate. Some children may not necessarily show any signs of experiencing trauma after a traumatic event but should receive intervention services to prevent concerns from arising in the future. Adults and teachers should always make reports to Child Protection Services if there are any concerns that a child is in danger.

Chapter 3: Conclusions and Recommendations

As an early childhood special education teacher, I have worked with many children and families who have experienced one or more traumatic events or childhood maltreatment. As a special educator, new to the field, it was difficult for me to distinguish between behaviors due to disability and behaviors or delays due to trauma. When working with this population, I found it difficult to respond to children and families who would share their stories or show symptoms of trauma. My knowledge in responding to trauma and being aware of the resources available to me was minimal prior to my own in depth study of trauma and the effects it has on child development. I conducted this review of literature in order to learn more about the known damaging effects trauma, childhood maltreatment, and ongoing stress have on a young child's brain and their development.

Historical information and theoretical background information were shared in Chapter 1, followed by the review of six research studies in Chapter 2. In this chapter, I present conclusions, recommendations for future research, and implications for practice.

Conclusions

Children who have experienced or are experiencing maltreatment and trauma in their lives have difficulty performing in a school setting that meets school and societal expectations. Due to children's basic needs not being met or to changes in their brain structures acquired from high stress, children are unable to learn new skills or regulate their emotions. A collaborative team approach is needed to provide trauma-informed interventions that lead to an overall increase in positive child mental health and academic success.

Critiquing the Findings

All six studies were reviewed regarding the effects of trauma on early childhood development and young children's brains. Changes in brain formation, the brain's response to stimuli, and impacts on child development were main focal points all articles shared. Educators and those working with young children must be aware of the symptoms of trauma and the effects on child development.

Each study did have common themes as to how trauma, maltreatment, and ongoing stress impact child development and the structure of the brain. However, each study did address the effects of trauma from different viewpoints and used different measures to determine the extent of impact caused by trauma and maltreatment. Four of the studies used functional magnetic resonance imaging (fMRI) during a series of tests to explore if children who experienced trauma at a young age responded differently and had different brain structure than individuals who did not experience early childhood adversities. The remaining two studies used a series of questionnaires, assessments, and interviews to determine the extent of trauma children had experienced, trauma's effects on development, and the risk level of being diagnosed with a mental illness (depression, anxiety, addiction, etc.).

All six studies seemed to agree with one another on the effects adversity in early childhood has on child development and brain development. Physical changes in the brain and body, along with behavioral changes and developmental impacts were caused by ongoing toxic stress early in life. Many individuals who have experienced trauma early in life are now experiencing mental health concerns, behavioral concerns, and academic concerns.

Recommendations for Future Research

Although young children have been experiencing trauma and maltreatment for decades, the study of how it impacts childhood development is relatively new. Longitudinal studies on how trauma experienced in early childhood impacts development, behavior, and psyche were difficult to find. Future research should look at the specific impacts on child development and early academics due to experiencing trauma.

Implications for Current Practice

I know firsthand how overwhelming and helpless someone can feel when working with students and families who have experienced or are experiencing trauma and maltreatment. I know how difficult it is discerning between disability and symptoms of trauma or abuse. With few accessible resources regarding trauma and its' effects on development available to me within my school district, I scoured the community and internet for any and all resources that could answer my questions.

I found the research that was available was difficult to understand and interpret without having a medical background. I immersed myself in trauma-informed websites and groups, attending all trainings reasonably available to me. When attending professional development workshops about trauma, it was clear to see that trauma does impact early childhood development and behavior but to what extent depended on the child and the abuse or trauma they experienced.

Early childhood educators and other adults invested in young children must be aware of the signs and symptoms of trauma, maltreatment, and stress. Adults must be available and ready to assist children through traumatic experiences by allowing them to process their emotions in a

safe and consistent environment. I will continue to gain knowledge about the effects trauma and maltreatment have on child development. I will present other teaching staff and families with information I have gained at workshops, trainings, or through review of research, in order to spread awareness of the importance of early childhood mental health.

Summary

Children who experience trauma and maltreatment early in life do show signs of academic delays, risk for mental illnesses, and changes in brain structure and response to stimuli. Adults who work with young children must be aware of the signs and symptoms of trauma and refer children to early intervention services to decrease the long-term impacts of trauma and maltreatment. Adults must be ready to respond to children's responses to trauma and assist them in processing their emotions in a healthy and productive manner.

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Building Resilience and Repair in Children after Trauma

by

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Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

"Trauma is personal. It does not disappear if it is not validated. When it is ignored or invalidated, the silent screams continue internally heard only by the one held captive. When someone enters the pain and hears the screams, healing can begin" (Bernick, 2014, p. 146).

As an Early Childhood Special Education Teacher, I meet and work with a variety of young learners and their families. These individuals vary by ability level, culture, religion, socioeconomic status, and background. These young learners come with a multitude of coping and survival mechanisms, often displayed as fight, flight, or freeze behaviors. When first starting my career, the behaviors that worried me the most were "fight" behaviors or aggressive and violent behaviors, such as throwing chairs or tables, physically harming others or self, hoarding items, and screaming. Now, I am just as concerned for children who display "flight" and "freeze" behaviors including: flat affect, inability to build relationships, selective mutism, resistance to join activities, and secluding self.

Honig (2010) believes children's behaviors show their distress, and often times, emotional vulnerabilities. In order to be able to learn, children must have their physical and emotional needs met. Children use adults to help regulate their emotions, provide for their physical and emotional needs, and be a consistent and caring figure in their lives. If children's needs are not being met, their behaviors will be key warning signs to adults that something problematic is occurring in their lives.

The purpose of this paper was to review research literature on how educators can build resilience and repair in children after trauma and stress. Training educators, child care professionals, and other individuals who work with or around children on a daily basis, to build

resilience, is a major goal in the world of Early Childhood Education. Many of these trainings

include promoting repair in children after trauma and ongoing stress and supplying caregivers

and educators with a variety of resources.

In this first chapter, I give a brief overview of the evolution of Early Childhood Special

Education followed by the focus of review and importance of research. This chapter also

contains definitions for key vocabulary used throughout this paper.

Evolution of Early Childhood Special
  Education and Early Intervention

Early Childhood Special Education (ECSE) and Early Intervention (EI) are relatively

new in the field of education and special education. The evolution of Early Childhood Special

Education and Early Intervention started in the mid-1950s to mid-1960s when Dorothy Sievers

and Sam Kirk led research, each using one group of institutionalized children and one group of

community-based children. The outcome of this research proved not only that interventions

could be implemented, but they could have a positive effect on young children with significant

disabilities. Behaviorist, B.F. Skinner, inspired Sid Bijou and Don Baer to research and

demonstrate that behavior could be modified through operant conditioning, where an individual

makes an association between a particular behavior and a consequence.

Other theorists who made impacts on the creation of Early Intervention and Early

Childhood Special Education during this time include Noam Chomsky, Jean Piaget, and Jerome

Bruner. Noam Chomsky believed children's skills developed through a biological process. Jean

Piaget believed that children learned through their experiences. Jerome Bruner believed that any

child could learn a new skill if it was built on existing skills that a child had mastered, also known as scaffolding.

During this time, community-based programs for children ages birth to preschool with learning or social-emotional delays did not exist. There were no programs to prepare educators to become early childhood special education teachers, nor was there legislation in place that addressed the needs of young children with disabilities and their families (Bricker, Huichao, & Bohjanen, 2018).

Between the mid-1960s and early 1970s, a foundation for Early Childhood Special Education and Early Intervention was laid. During this time, Nick Hobbs founded the Re-education of Emotionally Disturbed Children (Re-ED). At Re-ED, educators were taught how to become effective interventionists with children who had behavioral or social emotional challenges in a group setting. Hunt (1961) expanded on Piaget's theories in his book, *Intelligence and Experience,* demonstrating the benefits of early intervention services among children with disabilities and that young children build knowledge from materials within their environment.

Not only were educators and researchers beginning to understand how children learn and how their environment impacted their development, many legislative changes to meet the needs of those with disabilities were also occurring. The Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963 (PL 88-164) was created for federal government to assist in providing service, training, and research activities regarding mental retardation and developmental issues. In 1968, the Handicapped Children's Early Education Program (HCEEP) was created under the Handicapped Children's Early Assistance Act (PL91-

230) to show the usefulness of early childhood education and provide financial assistance for programs. Court decisions from *PARC vs. Commonwealth of Pennsylvania* and *Mills vs. Board of Education of District of Columbia* supported the rights of those with disabilities and required that states provide school-age children with free, and appropriate education. These rulings did not, however, apply to preschool-age children.

In 1970, the Kennedy Center at Peabody College created the Toddler Research and Intervention Project, or the Toddler Project. This was the first community-based, development-focused program for young children, specifically toddlers, with disabilities while integrating them with typically developing children. In 1973, the Division for Early Childhood (DEC) was created and then became the Council for Exceptional Children, whose main purpose was to advocate for young children with special needs by creating standards, policies, and advancing research on interventions.

During the mid-1970s to mid-1980s, the Education for All Handicapped Children Act (EHA; PL 94-142) was enacted to provide incentives to states who serve pre-school-age children in a least restrictive environment (LRE). During this time, the government began supporting preparation programs, focused on young children with disabilities that were being created by universities across the nation. Due to the rise of EI/ECSE preparation programs, community-based programs for children birth to preschool-age with disabilities began operating across the United States. Support for research and demonstration programs regarding early intervention was also given by the federal government during this time and promoted the sharing of information and the creation of comprehensive and developmentally-based approaches to work with young children with disabilities and assessment and evaluations measures.

In the mid-1980s to 1990s, an amendment was made to EHA, now known as PL 99-457, creating funding for states to provide services to children birth-2 years of age with disabilities. States participating in PL 99-457 were required to develop statewide infant and toddler programs. This amendment, along with funding from the government, built a firm foundation for Early Intervention and Early Childhood Special Education. During this time, EI/ECSE professionals were determined to show the benefits of early intervention, create reliable and functional tools to measure development and determine developmentally appropriate intervention targets, create comprehensive intervention approaches and curricular materials to assist educators, and push for integration between children with disabilities and children who were typically developing. In 1986, the National Association for the Education of Young Children (NAEYC) and the DEC stated that early childhood programs accommodate children's needs instead of expecting children to meet the demands of specific programing. EI/ECSE programs spread throughout the United States with the help of federal legislation and judicial decisions that protected the rights of individuals with disabilities and ensured equal access to community resources.

All of these theories and movements evolved for the purpose of improving special education and to support all children and their development. Early Intervention and Early Childhood Special Education evolved from interventions that had been used with older children and adults with disabilities. Through research and many trials of providing early intervention services, the field of Early Childhood Special Education began to identify a variety of new ways to deliver interventions to young children that extended to what we now call the five areas of development: motor, cognitive, adaptive, communication, and social-emotional. Historically,

and even still today, education has focused on teaching children academic skills, such as literacy

and mathematics, or vocational skills. However, we are now starting to see a shift in Early

Childhood Education and Early Childhood Special Education that is focusing on social-

emotional development and building resilience in young children to assist them in overcoming a

variety of obstacles. We are learning from our experiences with young children who have

experienced trauma and are discovering other approaches to assist them in their development and

support their individual needs.

Research Question

The following research question guides this review of literature:

1. How can educators build repair in children who have experienced trauma?

Focus of the Review

At this time, I have located five qualitative and quantitative studies related to educators

using restorative practices, within a school setting, to build resilience in children who have

experienced trauma for extended periods of their lives. Studies were published from 2013-2017

in English-speaking and non-English-speaking countries. The research studies and articles

shared in this paper discuss the impact of building repair in children and using restorative

practices within a school setting.

Academic Search Premier, Education Resources Information Center (ERIC), Minitex,

and PsycINFO were all used to locate studies. A variety of keywords and keyword combinations

were used in these search engines: *trauma* and *resilience in children, trauma and children,*

restorative practice and *young children, repairing children after trauma, building resilience in*

children and *child development, trauma* and *early intervention, trauma-informed practices* and

trauma responsive school. In addition, I have explored contents of *The Journal of Child Psychology and Psychiatry* and have attended many professional development trainings focused on responding to trauma in children's lives and assisting them toward repair.

Importance of the Topic

As an early childhood special education teacher, I work with many children and families varying in abilities, backgrounds, culture, socioeconomic status, and resources. Unfortunately, in my experiences as a special education teacher, at least 50% of children on my caseload, aging birth to age 4, have experienced three or more traumatic events or adverse childhood experiences (ACEs) in their short lives.

Knowledge about trauma, trauma informed practices, and building resilience in young children continue to evolve. As a result of this paper, I hope to determine what strategies are effective toward building repair and resilience in young children who have undergone traumatic events in their lives. I want to influence the importance of building resilience in young children and using trauma informed intervention practices within the classroom.

Definitions

Critical terms are defined in this section. Additional terminology and definitions for this section will be added as Chapter 2 is developed.

Active listening. The capacity to listen sensitively to another (Rogers & Farson, 1957).

Adverse Childhood Experiences (ACEs). Direct or indirect traumatic events that include but not limited to: witnessing domestic violence, parental substance abuse, criminal activity by member of household, chaotic lifestyle, incarceration of a parent, parent mental illness (Stone & Bray, 2015).

Conflict. A relational interaction, emerges when a disagreement has potential implications for the relationship (Evans & Vaandering, 2016).

Harm. Anything that undermines a person's dignity or minimizes their worth (Evans & Vaandering, 2016).

Infant and Early Childhood Mental Health. A multidisciplinary educational and research discipline that promotes prevention and intervention programs that promote mental health of infants and young children (Zero to Three: Early Connections Last a Lifetime, 2016).

Least Restrictive Environment (LRE). The setting where a child with a disability can receive an appropriate education designed to meet his or her educational needs, alongside peers without disabilities to the maximum extent appropriate.

Operant Conditioning. Where an individual makes an association between a particular behavior and a consequence (Skinner, 1938).

Resilience. The ability to establish a pattern of stable and healthy adjustment following an aversive event (Bonanno, 2012).

Scaffolding. Building on existing skills that a child has mastered (Bricker et al., 2018).

Secondary Trauma. The experience of caretakers who are in close proximity to, and have relationships with, others who are experiencing trauma and toxic stress but who do not have sufficient supports (Blitz, Anderson, & Saastamoinen, 2016).

Social Reconstruction. Changing the curriculum in schools to address the inequalities among children (Casper & Theilheimer, 2010).

Toxic Stress. The bodies' prolonged exposure to excessively high levels of stress hormones that become harmful, particularly during child and adolescent development (Shonkoff,

Garner, & the Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, 2012).

Trauma-informed. Understanding the ways in which violence, victimization, and other traumatic experiences may have impacted the lives of individuals involved and to apply that understanding to the design of systems and provision of services so they accommodate trauma survivors' needs and are cognizant about healing and recovery (Carello & Butler, 2015).

Trauma-informed School. Realizes the prevalence of trauma in children; recognizes the physiological and relational impact of trauma on students and school personnel; responds by translating this knowledge into practice as part of school-wide supports; and reduces re-traumatization by adopting practices that promote healing and growth rather than punishment and exclusion (Blitz et al., 2016, p. 523).

Stress. An individual who shows difficulties in personal relationships and worrisome bodily responses, that he or she is having a struggle and cannot cope with felt or perceived difficulties (Honig, 2010).

Chapter 2: Review of Literature

In this chapter, I review five studies reported over the last five years that examine building resilience and repair in children after experiencing trauma. The first section of Chapter 2 presents findings regarding the outcomes of trauma-informed schools and trauma-informed teaching. A description of study participants, procedures, data analyses, limitations, and conclusions are included in each summary. The second section reviews resources that are being used in school settings to promote hope and healing after trauma, tips for decreasing young children's stress in the classroom, and repairing harm in schools.

Studies that Examine Outcomes of Trauma-
   Informed Teaching Practices

The five studies included in this section of Chapter 2 examine trauma-informed teaching practice outcomes. These studies examine opportunities for repair for children who have suffered trauma. Students who have suffered trauma in their lives are surrounded by peers and adults throughout their daily routines but are socially isolated from their peers and are emotionally dysregulated. Interventions responding to trauma within a school system will be covered in this this section.

Marans (2013) evaluated the effectiveness of expanding approaches to early intervention for children who have undergone trauma using Child and Family Traumatic Stress Intervention (CFTSI). The purpose of CFTSI is to allow victims of trauma to organize their feelings, allow for communication between child and caregivers, and increase self-regulation and personal control. CFTSI uses clinical interviews focusing on developmental history, traumatic events, current environmental stressors, and standardized assessments used to recognize symptoms of

trauma. The study was conducted in New Haven, Connecticut, with referrals from the New Haven Child Development-Community Policing Program, a program that provides interdisciplinary mental health interventions to children and families who are victims, witnesses, or perpetrators of violent crimes. Marans used a "randomized controlled trial that was designed to evaluate the effectiveness of CFTSI, children in the study had an average of five significant types of potentially traumatic events in their history prior to the event that precipitated referral for treatment/assessment" (p. 256).

Marans (2013) compared the randomized controlled trial to children and parents who received more traditional approach to trauma evaluation and response. CFTSI groups followed a 5-8 session model that provided caregivers and families with interventions that can be used with children ages 7-18 years shortly after a traumatic event or after the discovery of a traumatic event occurring.

Marans (2013) identified that the major sources of fear or danger come from the death of those we love, losing the affection of those we care about, bodily impairment, lack of control over our actions, and lack of consistency from day-to-day routines. Children whose caregivers do not recognize their child's distress after a traumatic event occurring or there is an absence of family/caregiver support, most often lead to poor post-traumatic outcomes for children. If children experience relentless trauma, disruption of daily routines, or lack of community or caregivers providing emotional stability, recovery cannot begin (Marans, 2013).

Through their sessions, therapists educate caregivers and children regarding trauma and reactions to trauma. Symptoms of trauma are identified, symptoms are discussed along with being given strategies to cope and overcome symptoms, and progress is reviewed regarding

overcome reactions to trauma. It was recorded that children were 65% less likely to achieve a

diagnosis of post-traumatic stress disorder (PTSD) when comparing to the comparison group.

Training caregivers in acknowledging trauma in children and giving them the skills they need to

address post-trauma signs in children has proven to be more effective than basic one-on-one

therapy sessions between child and therapist.

Blitz et al. (2016) studied the importance of trauma-informed pedagogy within an urban

elementary school located in the Northeast of the United States.

> In the last 30 years, this once mostly White middle class community saw a
> more than 200% increase in racial diversity. At the time of this study,
> more than 25% of all children, and nearly 50% of children of color, lived
> below the federally defined poverty level, and 70% of the households had
> incomes less than the 2012 national median of $51,371. (p. 524)

Through this study, Blitz et al. (2016) studied how school districts can promote building

resilience and healing in children after they have been exposed to toxic stress or trauma. Toxic

stress, prolonged exposure to high levels of stress hormones, has shown differences in a child's

mental and physical health (Diez Roux & Mair, 2010). According to Howell (2004), these

differences in a child's mental and physical health appear early, "as 20.5% of children from

families living in or near poverty exhibit behavioral or emotional difficulties compared to 6.4%

of children from financially stable homes" (Blitz et al., 2016, p. 522). Children who undergo

toxic stress or trauma and toxic stress, need supportive and consistent adult relationships that

teach them how to cope with the stressors in their lives (Garner et al., 2012).

In order to use trauma-informed pedagogy within a school setting, teachers and

classroom aides must be properly trained in responding to trauma, as they are the individuals

who work with children most consistently. When trained, teachers and classroom aides can

teach children how to cope with trauma, build resilience, model problem solving techniques, and provide safety through consistent expectations and routines (Baum, Rotter, Reidler, & Brom, 2009). This study "investigated teachers' and classroom aides': (a) perceptions of student behaviors; (b) understanding of both trauma and toxic stress and race; and, (c) self-reported stress levels of teaching efficacy" (Blitz et al., 2016, p. 524).

When training teaching staff about trauma-informed pedagogy, Blitz et al. (2016) stated the importance of being mindful of secondary trauma, trauma that caregivers may experience while working with or supporting those who experience trauma and toxic stress. It is vital that school districts support their teaching staff by providing sufficient and on-going training in responding to trauma and training in managing secondary trauma, for those who are supporting traumatized children. Cole, Eisner, Gregory, and Ristuccia (2013) described trauma-informed schools as those that realize the prevalence of trauma in children, realize the impact trauma has on children and school staff, and offers school-wide supports to promote healing.

Teaching staff who participated in Blitz et al.'s (2016) study did so voluntarily. Three questionnaires were used to gather information and data for this study; *'Cultural Ecology'*, *'Perceptions of Student Behaviors'*, and *'Stress Level, Efficacy, and Confidence'*. These questionnaires were developed by the community-based participatory research team to accurately reflect the staff's experiences. Qualitative data were collected through interviews with staff who volunteered to answer the question, "What are your thoughts on how these issues of race, culture, and trauma impact your students?" These interviews lasted anywhere from 5 to 20 minutes.

Data were collected three times throughout the school year of 2013-2014. One data point took place in October when staff were given the three questionnaires after a presentation

providing information on neurophysiological and behavioral impacts of trauma and toxic stress

(Blitz et al., 2016). Additional qualitative data were obtained in April and May after short

interviews were conducted and surveys were completed by those who volunteered to participate.

Twenty-six out of 35 teachers and 16 out of 25 aides participated in completing questionnaires.

Twenty out of 35 teachers and nine out of 25 aides participated in the interviews. Ninety-seven

percent of teachers and 92% of aides in this study identified themselves as White, with 89% of

teachers and 96% of aides being female (Blitz et al., 2016).

Using univariate and bivariate distributions, quantitative data were analyzed between

teachers and school aides to recognize differences in outlooks on this subject. Qualitative data

from interviews, analyzed using priori codes and axial coding, were used to understand

perspectives on "the impact of trauma and toxic stress and race and culture" (Blitz et al., 2016).

According to this study, Blitz et al. discovered four major themes that arose from the interviews.

These four themes were: (1) Awareness of trauma and toxic stress in the lives of students;

(2) Perception of a lack of structure, guidance, and support for education in the children's homes;

(3) Need for teaching tools and strategies to support student learning; and (4) Emotional burden

of secondary trauma and stress" (p. 530).

This study supports the ideas used in the Sanctuary Model created by Dr. Sandra L.

Bloom, a theory-based, trauma-informed, evidence-supported, whole culture approach that

recognizes and addresses safety, emotions, losses, and future within a school setting. Overall,

this study shows the importance of making schools safe and welcoming through culture and

trauma awareness. Teaching staff need to be trained how to work with stressed families and how

to identify trauma in children. Teaching staff need classroom-based strategies for dealing with

emotional and behavioral difficulties. Children need to be taught strategies on how to learn after trauma and be given educational supports since brain development is impacted after such experiences. Encouraging family involvement within school settings is important for teaching staff to build trusting relationships with families that allow open conversations regarding difficult topics such as trauma, toxic stress, and behaviors or academic challenges that may arise.

Morgan, Pendergrast, Brown, and Heck (2015) studied the importance of trauma-informed pedagogy as a way to re-engage students in learning after undergoing trauma or high stress. This study was done in Queensland, Australia, comparing the rate of school completion between students of low socio-economic status and Indigenous people who live in remote regions to all other young Australian students between five schools. This study also researched how, "the contextual influences in practice in flexi schools by considering how ways of working and ways of professional learning influence educator identity and development; second, enhancing staff induction processes through prototyping reflective practice groups (RPG) as a strategy for supporting the development of educators as reflective practitioners" (p. 1041).

This study used three stages of experiment: exploration through questionnaires and interviews, enactment through researcher journal entries, and evaluation through written evaluations of participants' experiences. Bannan-Ritland's (2003) model of design was used as a guide for this process.

The purposes of trauma-informed practices within schools consider how trauma can affect brain development and the ability to learn. In addition, this study shows that trauma leads to learning difficulties, dysregulation, difficulty forming relationships, problems with attachment Attention difficulties, problem behaviors, hyper-arousal and dissociation (Morgan et al., 2015).

A common correlation between this article and previous articles is that a child's physical and mental well-being must come first before any learning can begin or continue. Although intellectual needs are important, it is difficult, if not impossible for a child whose basic needs such as safety, nutrition, and emotional needs are not being met, to learn and be successful. One way teaching staff can support children who have or are undergoing large amounts of stress or trauma in their lives is through building safe and supportive relationships with all children. According to this study, when the teacher-student relationship is safe and supportive, it allows deprived children to be heard by teaching staff and peers, respected, and be active in directing their own learning. Relational pedagogy allows children to feel empowered and a have a voice, not only in their learning, but in other aspects of their life as well.

The keys to making this method of teaching successful is having a balance between education and children's welfare. Another key component to this teaching strategy is to be proactive instead reactive to young children and their needs. According to questionnaires and interviews, educators viewed caring and supporting as the most important aspects of their work. In order to create successful, supportive, and safe relationships with students, teachers must become active listeners and take time to care. It is imperative that educators connect with students in order to prevent students feeling isolated and to encourage well-being. Educators need to learn about the effects trauma and high-stress have on children in order to have an understanding about child behavior and how to respond to it. When educators have knowledge regarding the impacts of trauma in child development and behavior, they will be better equipped with how to address issues that may arise and to prioritize safe and supportive relationships (Downey, 2009).

Baum et al. (2013) studied the effects of training teachers in building resilience in children in the aftermath of war. In this study, Baum et al. evaluated the efficacy of the "Building Resilience Intervention" (BRI) (Baum et al., 2009) that uses teacher trainings to give teachers tools to build resilience in themselves and their students in a classroom setting. There are four objectives to the BRI method, with those being known as the four "S's": "(1) Self-awareness and regulation; (2) Support for feelings; (3) Strengths and personal resources for coping; and (4) Significance, meaning, and hope" (Baum et al., 2013, p. 341). Teachers are trained during four, 3-hour workshop meetings over a 2-month time span, totaling 12 hours of training in all. Each of these trainings were led by mental health professionals who were trained in BRI and have strong knowledge and understanding in trauma and resilience (Baum et al., 2013). One objective is focused on during one workshop meeting and has a psycho-educational component. These workshops give teachers activities, skills, tools, and strategies for processing trauma in their own lives and in a classroom setting. Teachers are also provided with manuals that give them ideas on how to incorporate evidence-informed activities, such as meditation or art therapy, into their classrooms. "The primary focus of this intervention is expanding teacher's personal sense of resilience. The hypothesis is that when the training program focuses on teachers themselves and the ways they relate to trauma as individuals, increasing their own resilience and coping skills, there will be a positive impact on their results" (Baum et al., 2013, p. 341).

For this study, four Jewish schools in Acre, Israel, were evaluated to determine the successfulness of BRI in helping schools cope with the aftermath of war. Acre, a town populated with 40,000 people in Israel, was attacked during the second Lebanese war and suffered loss of

life. Baum et al. (2013) used a randomized cluster design to measure effects of the intervention between these four schools, with two schools being selected as the intervention control group and the other two schools being a wait-list control group.

During this study, each student in grades 4-6 in all four schools was given an evaluation in May, 2008, before the intervention began. The next evaluation was given in December, 2008, after the intervention was completed by the two schools. For this study, each grade served as its own cluster and students were measured through the use of nested cross-sectional design. In order to collect data, a questionnaire regarding student demographics, exposure to war, trauma history, posttraumatic severity, and separation anxiety was given to students. The questionnaire included UCLA PTSD index along with the separation anxiety subscale of the Screen for Child Anxiety Related Disorders (SCARED).

Table 1 shows Baum et al.'s (2013) data and the positive response the BRI had on students in the Acre schools.

Table 1

Building Resilience Intervention Data Showing Positive Response in Students

	Time	Mean	SD	N	Mean (SE)	Pre-Post p Value	CI
PTS severity							
Intervention	Pre	19.86	14.14	136	7.71 (1.70)	0.000	(4.36 to 11.05)
	Post	12.15	12.50	115			
Wait-List Control	Pre	15.65	12.66	144	0.69 (1.51)	0.651	(-2.29 to 3.67)
	Post	14.96	13.53	157			
Anxiety							
Intervention	Pre	5.85	4.14	119	2.07 (0.54)	0.000	(1.02 to 3.13)
	Post	3.78	3.88	107			
Wait-list Control	Pre	4.30	3.47	139	-0.65 (0.43)	0.137	(-1.50 to 0.21)
	Post	4.95	3.88	153			

Baum et al. (2013) proved that training educators to respond to post-traumatic environments and post-traumatic mental health challenges, decreases posttraumatic stress and anxiety in students. This study shows the importance of a teacher's role on promoting their student's mental health through daily interactions that support resilience and awareness of trauma and trauma symptoms by creating safe and consistent school environments and building trusting and caring relationships between teachers and students.

The fifth study to reveal outcomes of trauma informed practices in schools was completed by Willis and Nagel (2015) in their study of how teachers play a role in overcoming the effects of stress and trauma on children's social psychological development. Willis and Nagel used previous research supporting education as a protective factor for reducing high

emotional stress through its' safe and supportive environments. Northern Uganda was chosen for this study after undergoing approximately 40 years of civil conflict from 1971-2006, resulting in upsets to homes, schools, villages, and communities. Many people were displaced along with formal education ceasing altogether. During this time, many children were abducted and turned into child soldiers or sex slaves. Schools and children that were left during the war focused on educating children on survival skills and war tactics instead of mathematics and literacy.

Many studies have identified trauma as being the reason for challenges with physical health, mental health, and social development in childhood (Betancourt, Speelman, Onyango, & Bolton, 2009; Dodge, 1993; Joshi & O'Donnell 2003; Osofsky 1995; Perry, 2001; Stichick, 2001). On-going toxic stress and trauma can cause harmful effects to a brain's plasticity and connectivity. After being war-torn, there are many stressors in Northern Uganda that continue to impact a child's capacity to learn such as: a high prevalence of human immunodeficiency virus and acquired immune deficiency syndrome (HIV/AIDS), inadequate parental care or child-headed households, poverty, and young girls becoming child-mothers due to poverty and having to terminate their education. These stresses make it difficult, if not impossible, for children to learn while living in an environment that does not meet their basic needs.

For this study, 10 school teachers and six school leaders from two government and two non-government primary schools in Northern Uganda were interviewed to describe their experiences regarding children's learning. Six categories of learning were described through the interviews: "(1) dependent upon cultural heritage and family background, (2) dependent upon the education system, (3) fragmented, (4) hijacked, (5) a mean to "opening the mind", and (6) a means for community rehabilitation" (Willis & Nagel, 2015, p. 43). Willis and Nagel chose to

focus on the metaphors, "hijacked" and "fragmented" for this study and found that teachers perceived that "children's learning is hijacked by the social and familial insecurities and stresses associated with war, famine, poverty and disease; and fragmented because of physical and environmental losses" (p. 44).

School teachers and leaders shared their reasons for calling education fragmented for children from Northern Uganda. Traditionally, children in Uganda were taught through oral tradition during work and around the fire. Formal education was introduced in the late 1800s, where children who already knew how to read, could attend. Due to war and conflict, elders of communities passed away and formal school ceased, leaving children to care for themselves. Children received no formal education nor did they know or understand healthy family and community lifestyles, leading to a continuous cycle of gaps in educational and familial support.

North Ugandan school teachers and leaders deemed their student's education as being hijacked by the stress of post-war effects. Some symptoms from these times of conflict include: being orphaned, raising siblings, watching family die of HIV/AIDS, or post-traumatic stress and depression due to memories of violent events. Teachers reveal that many of their students, if not all, are "double-minded," meaning that they are thinking about what needs to be done at home in order to survive and what needs to be done at school in order to learn.

In this study, teachers attempted to close educational gaps through home-visits with families and building self-esteem in children. Educators must be aware of the symptoms and signs of trauma and assist children in processing their emotions before they are able to learn. Teachers are vital in restoring healthy social norms, bringing structure to children's day-to-day routines, teaching about healthy living habits, and providing educational experiences that are

relevant to daily life and assist children in understanding their environment. Teachers are used

as models, to the community and their students, of healthy relationships and provide children

with safe and consistent learning environments. It is important that educators teach children

language and literacy skills in order for children to describe the experiences they have gone

through, make sense of their emotions, and manage the feelings in a safe and socially appropriate

manner.

Table 2

Summary of Chapter 2 Findings

AUTHORS (DATE)	DESIGN	PARTICIPANTS	PROCEDURE	RESULTS
Baum, Cardozo, Pat-Horenczyk, Ziv, Blanton, Reza, Weltman, & Brom (2013)	Quantitative and qualitative data were collected.	Four Jewish schools suffering from the effects of the Second Lebanese War in Acre, Israel. From each school, every student in grades 4-6 was used in this study, totaling 563 students.	Teachers attended four 3-hour workshops over a two month time span on how to incorporate activities and strategies that build resilience, into their classrooms. Questionnaires and surveys were used, along with randomized cluster studies to obtain data on student's background and trauma recovery.	Students who had teachers trained in responding to trauma and symptoms of trauma had a decrease in anxiety and posttraumatic stress.
Blitz, Anderson, & Saastomoinen (2016)	Quantitative and qualitative data were collected	61 urban elementary school teachers and educational aides.	Questionnaires, interviews, and surveys of participants were used to gather information regarding obstacles that educators face when working with children who are exposed to trauma and toxic stress.	Educators face many obstacles when addressing student's behavioral and academic challenges related to trauma and toxic stress. Educators need access to appropriate resources (school counselors and psychiatrists) and continued training in building resilience.

Table 2 (continued)

AUTHORS (DATE)	DESIGN	PARTICIPANTS	PROCEDURE	RESULTS
Marans (2013)	Qualitative	176 children ages 7-18 years, referred from New Haven Child Development-Community Policing Program in New Haven, Connecticut	Randomized controlled trial using clinical interviews focusing on developmental history, traumatic events, current environmental stressors, and standardized assessments used to recognize symptoms of trauma.	Children who received Child and Family Traumatic Stress Intervention (CFTSI) were 65% less likely to achieve a diagnosis of post-traumatic stress disorder (PTSD) when comparing to children who received traditional approach to trauma evaluation and response.
Morgan, Pendergast, Brown, & Heck (2015)	Qualitative	79 teaching staff from five schools in Queensland, Australia	Questionnaires, interviews, journal entries, and written evaluations of participants were used to gather information regarding key themes in ways of working with young people who have undergone trauma.	Realizing that educators do much more than educate, they build relationships. These results led to strategies in how to build safe and successful relationships with students who have undergone trauma in order to help regulate them and assist them in becoming socially and academically successful.
Willis & Nagel (2015)	Qualitative	10 school teachers and six school leaders from two government and two non-government primary schools in Northern Uganda.	Nine interviews were conducted with 16 participants from two government and two non-government school. A code scheme was created to reflect emerging themes.	In order to build resilience and repair in students from war-torn countries, teachers need to cognizant of symptoms of trauma in order to help children process their feelings. Teachers need to provide consistent and safe learning environments, act as models of healthy living and healthy relationships, show genuine care for their students, and incorporate families into student's learning.

Resources Used in School Settings to Decrease Toxic Stress and Build Repair after Trauma

Honig (2010) shared her strategies for decreasing stress in young children through her

book titled *Little Kids Big Worries: Stress-Busting Tips for Early Childhood Classrooms.* Honig

stated that educators must be aware of children's responses to trauma and stress such as exhibiting behaviors through fight, flight, or freeze responses. Teachers must be made aware of the effects long-term stress and trauma can have on children, not only mentally, but physically, and trained in how to respond to trauma symptoms.

When looking for signs of trauma or stress in children, educators should pay close attention to attachment in children and whether they are displaying secure or insecure attachment behaviors. Temperament plays a vital role in how young children perceive and respond to stress and teachers need to take each child's temperament into account when analyzing for stress and responding to it. Educators must attend to externalizing and internalizing symptoms of stress; some students may display aggressive behaviors while other students bite their lip, clench their jaws, get headaches, or hide.

Even if children are not exposed to consistent, warm, and caring adult figures in their home environments, Honig (2010) stated that educators can be those consistent and caring figures and role models for children while at school. Teachers must be attuned to what is developmentally appropriate for children and use developmentally appropriate strategies when working with children who are stressed. According to Honig (2010), the following stress interventions are developmentally appropriate for children who are infant to preschool age: change a child's environment, define terms and emotions for children, use a child's name frequently and lovingly, and provide soothing physical and verbal contact. Teachers should provide discreet assistance to children when a task is too difficult, accept a child's self-comforting needs, create a quiet space for children to process emotions, and store a personal photo book in each child's cubby. Teachers may also prevent child stressors by reducing clutter,

finding alternative spaces for children stressed by large groups, giving children expectations, and redirecting rather than reprimanding. Teachers should build children's self-esteem through open-ended and engaging questions, provide positive attributes, spend one-to-one time with worried children, and let children take the lead.

In whole group settings, Honig (2010) shared that educators can find success in reducing stress in children through the use of relaxation games through yoga, breathing, or a variety of other calm exercises. Educators should create safe spaces for children to do vigorous movements such as a gym or fenced in shaded playground. Nurturing scenarios using toys can be created to encourage caring for others in a gentle manner. It is important that teachers model that it is okay to make mistakes sometimes. Feeding and rest schedules should remain consistent and soothing. Celebrating rituals such as birthday and important events in children's lives allows them to feel like an important part of society. Preparing children for change in routines will assist them in being less anxious during these times, as they know what to expect. Being clear and consistent with classroom expectations and providing positive emotional feedback is important for children to feel safe and know what to expect in their environment. Teachers should answer children's emotional questions honestly and briefly, listen empathetically, and use bibliotherapy to relate to children and their stress. The aforementioned strategies for reducing stress in early childhood classrooms have been studied and used by Alice Honig and taught in a variety of mental health workshops.

The Little Book of Restorative Justice in Education: Fostering Responsibility, Healing, and Hope in Schools by Evans and Vaandering (2016), is another resource used and found in schools. Restorative justice in education (RJE) strives to create just and equitable learning

environments, nurture healthy relationships, and repair harm and transform conflict. According

to Evans and Vaandering, RJE is defined as, "facilitating learning communities that nurture the

capacity of people to engage with one another and their environment in a manner that supports

and respects the inherent dignity and worth of all" (p. 8). The goal of RJE is to promote growth

and development in individuals and communities to their full potential. RJE includes and

encourages engagement between educators, students, parents/caregivers, colleagues, curriculum

and educational institutions (Evans & Vaandering, 2016).

The figure below shows the core beliefs of restorative justice in education.
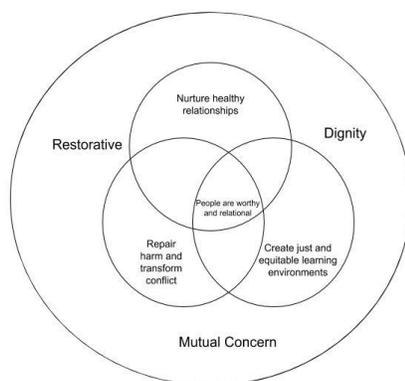
Figure 1. Restorative Justice in Education (Evans & Vanndering, 2016, p. 37)

In order to make restorative justice in education successful, all school staff must be

trained in ensuring the vulnerable are cared for, everyone is included, all individual's needs are

being heard and met, and that the dignity of all matters. Teaching staff should have a culturally

inclusive method of teaching such as finding authors of a wide variety and using books with

characters that represent all students. It is important that teaching staff model and teach students about healthy relationships that provide balanced expectations and support, starting with having a healthy relationship with one's self.

Talking circles are used to build and nurture healthy relationships within a school and classroom setting. Talking circles use a facilitator called a "circle keeper" to discuss topics that the group agrees upon, set up a space for the circle to meet, keeping conversation focused, and closing the circle. A "talking piece," an item that is passed around the circle, is used to show who "holds the space," meaning whoever has the talking piece can share, pass, or have a moment of silence. Talking circles can be quick, used to address harm, grief, controversial topics, debrief on a lesson or week, or to gather information. Talking circles teach educators and students how to listen and how to ask questions to solve problems and build healthy relationships.

RJE addresses harm and conflict by addressing the needs of all involved, problem-solving how to make things right, building supportive accountability, and transforming conflict. Restorative justice in education reduces harm and conflict through addressing justice and equity topics such as: racism, classism, sexism, homophobia, colonialism, etc.

Two schools were compared using RJE for 5 years. Eastpoint Community School used RJE with fidelity and saw a 45% decrease in suspensions and a 30% increase in graduation rates. Eastpoint integrated RJE theory and practice, infused it into their school programs, and had ongoing professional development trainings. In comparison, Sprucedale Regional School staff did not have a deep understanding in RJE and viewed it as a discipline system. Sprucedale Regional School saw a decrease in suspensions but had frustrated teachers due to children not receiving any consequences. Sprucedale focused only on specific skills learned from RJE, used

it as a tacked-on program, and received one session of initial training. Findings from this study show that when RJE is done with fidelity in an educational setting, it can promote development, healthy relationships, and problem-solving skills.

Riestenberg (2012) created a resource that goes hand-in-hand with restorative justice in education. Riestenberg's resource *Circle in the Square: Building Community and Repairing Harm in School* discussed restorative principles and how restorative practices are being applied and used in Minnesota schools. Restorative measures are used in Riestenberg's text as the steps one takes to achieve restorative justice and to repair harm.

Riestenberg (2012) pointed out the difference between a zero-tolerance method and restorative practice method. This difference being that rules are useful and can be used to point out harm or show shared values of a community but they should not be used to govern consequences. Instead, consequences and responses should be situational and focused on needs of individuals. The major foundation for restorative practice is building safe and healthy relationships within the school environment such as building trusting relationships with students and building connections with parents and the community.

Attending to the needs of the victim is an important piece of restorative justice. It is important that victims are given a voice and shown that they are valued. Likewise, it is important for offenders or bullies to know that they are needed in the community but that their behavior caused harm that needs repair. Addressing needs of both the victim and the bully is done in a way that does not exclude or humiliate either party; instead, each individual is listened to, valued, and their behavior is separated from the person. Through these strategies, victims and

offenders gain their voices and power in a positive way that will benefit personal growth and the communities they are immersed in.

According to Morrison (2007), there are three forms of prevention. Primary prevention is universal, consisting of an entire school community through reaffirming relationships. Secondary prevention consists on focusing on targeted groups, such as a classroom through a talking Circle used to repair relationships. Tertiary prevention addresses a specific harm done and uses face-to-face interventions to rebuild relationships with all those affected. It is important that teachers and other educational staff bring concerns that they see to the students themselves, using Minnesota Prevention Resource Center's six prompts of: (1) *I care,* (2) *I see,* (3) *I feel,* (4) *I'm listening,* (5) *I want,* and (6) *I will go with you.* These prompts will assist teaching staff in addressing troubling behavior or red flags and guide them in having positive discussions with students or other individuals.

Riestenberg (2012) addressed the talking Circle. This Circle method is similar if not identical to talking circles previously mentioned in Evans and Vanndering's (2016) book, *The Little Book of Restorative Justice in Education: Fostering Responsibility, Healing, and Hope in School*. This Circle has the same components such as a talking piece, Circle agreements, and Circle keeper. More specifically, elements include: a circle of chairs or participants sitting on the floor in a circle, the talking piece a centerpiece, elements that provide the communication structure for the process include-discussing values, developing guidelines or common agreements, making decisions by consensus, honoring confidentiality, creating a safe place, and maintaining the option to pass" (p. 77).

Circles can be done inside and outside of the school setting. Since this paper is about education, I will include a few ways Riestenberg (2012) suggested the Circle be used within a school setting. The variety of circles that can be used within an educational setting include, but are not limited to: circles of understanding, talking circles, healing circles, seminar circles, circles for intervening on behaviors and repairing harm, conflict circles, re-entry circles, circles for Individual Education Plans (IEP), truancy circles, morning meeting circles, staff development circles, and writing circles. Each circle should be done with intentions of being constructive, respectful, and to solve problems and repair harm.

Chapter 3: Conclusions and Recommendations

As an early childhood special education teacher, I have experienced working with a variety of traumatized or highly stressed children. When my students are in a classroom setting, I often observe educational staff and students looking uncomfortable around children who are socially and emotionally distant, who have outbursts of impulsive or problematic behavior, or who avoid all interactions with others. However, this does not pertain only to children with special needs but to all children who have undergone extensive trauma and toxic stress. I conducted this review of literature in order to learn more about responding to the effects of trauma and stress in children within a school setting. In addition, I wished to examine outcomes for children who are taught by teachers using trauma-based interventions.

Historical information and theoretical background information were shared in Chapter 1, followed by the review of five research studies and three classroom resources in Chapter 2. In this chapter, I present conclusions, recommendations for future research, and implications for practice.

Conclusions

Children who have experienced or are experiencing toxic stress and trauma in their lives have difficulty performing in a school setting that meets school and societal expectations. Due to children's basic needs not being met or to changes in their brain acquired from high stress, children are unable to learn new skills or regulate their emotions. A collaborative team approach is needed to provide trauma-informed interventions that lead to an overall increase in positive child mental health and academic success.

Critiquing the Findings

All five studies and three resources were reviewed regarding trauma-informed interventions used in a school setting. Building safe and trusting relationships between teachers, children, their caregivers, and the community was the main focal point between all articles and resources. Educators must be aware of symptoms of trauma and how to assist children in healing from their experiences using a variety of methods.

Each study did have common themes to assist in building repair in young children such as observing signs and symptoms of trauma, building safe relationships in a safe environment, listening in a respectful and nonjudgmental manner, and including the whole community to heal children. However, each study did address trauma from a different lens and used different interventions. One intervention reviewed involved the child who underwent trauma, their caregiver, and trained therapist (Marans, 2013). Three other studies used teacher perspectives to gain information on child trauma, its' impact on education, and effectiveness of interventions (Blitz et al., 2016; Morgan et al., 2015; & Willis & Nagel, 2015). The last study used information collected through questionnaires given to students to collect data regarding their mental health and if interventions led to a decrease in problematic mental health symptoms (Baum et al., 2013).

Although all five studies discussed positive outcomes when addressing trauma in children at a young age, they all recognized that building repair comes with obstacles. Educators realized that each individual involved with the child needs to be focused on the same goal of building repair after trauma, be properly trained and supported, and given the proper tools to integrate trauma-informed education into their classrooms. Many educators felt like they had not been

properly trained to support the high needs of students after they had experienced a traumatic event. Some support was lacking from administrators by not setting up sufficient resources or ongoing trainings for educators. Not all educators or school staff were trained in trauma-informed responses nor were they all cooperative during the implementation process, leaving big gaps in the fidelity of implementation.

Many caregivers or family members, due to their backgrounds or previous experiences, do not trust school institutions or realize the importance of addressing trauma early to encourage healthy development. This is a big obstacle for educators as they need to build a foundation of trust with families while also educating them. Getting the community involved in responding to trauma in children is vital to build safe and healthy supports for children to turn to when in need or during after school hours.

Recommendations for Future Research

Trauma-informed education and building resilience and repair in students after trauma has been and is at the forefront of early childhood mental health and early childhood education. However, when looking for articles that addressed how trauma-informed education benefits child development and positive mental health, it was difficult finding data on how intervention promotes development and academic success while decreasing problem behaviors. Future research should look at specific interventions to determine if they lead to a rise in academic achievement and decrease in problem behaviors. Future research should address training staff, instruction, and other factors that limit students' growth and recovery after trauma. The experiences and attitudes of all stakeholders in trauma-informed teaching, such as teachers, students, families, and members of the community should be researched.

Implications for Current Practice

I know firsthand how overwhelming and intimidating it can be working with students who display large, aggressive, and impulsive behaviors. I know how difficult it is connecting with students who avoid all relationships and adult or peer interactions. In my first year of teaching, I had a caseload of 18 children with four being placed in emergency foster care throughout the year due to severe neglect, abuse, and other types of trauma. Aside from a family advocate, our early childhood building had limited resources for me, as an educator, to access. Our building does have the opportunity of working with a school psychologist one half day a week, but her time at school is spent doing evaluations or observations for evaluations.

With few accessible resources within our school district, I scoured the community looking for any and all resources that are made available to young children who have experienced trauma and could help build repair. I found that many of these mental health programs do take referrals from educators but in order for children to receive services, caregivers must have proper insurance, be able to transport children, and be able to mentally invest themselves in these programs with their child. I immersed myself in trauma-informed websites and groups, attending all trainings reasonably available to me. When attending these professional development workshops, it was clear to see that the majority of these only explained what trauma-informed teaching in mental health agencies looked like and how it benefits young children. These workshops never got into the training part of being trauma-informed in a school setting. One training, hosted by the Minnesota Department of Education, did give many resources on including trauma-informed practices within the classroom for an individual

educator and offered to have a team train school districts for a fee. This means, in order to have fidelity in trauma-informed practices, an educator must get their administrator and superintendent's approval and support for district-wide training.

Teaching staff, school staff, families, and communities must advocate for our student's mental health and push toward having accessible resources readily available to all. I will continue to gain knowledge in trauma-informed practices and building repair and resilience in students. I will present other teaching staff with information I have gained at workshops or through reviewing research, in order to spread awareness of the importance of early childhood mental health and increase positive outcomes in children's relationships with others and academics. I will begin to incorporate strategies learned from the three resources listed in Chapter 2 to address peer's responses to their classmate's atypical behavior, assist other classroom staff in addressing children's mental health needs, to build a safe and less-stress environment, and to create trusting and safe relationships between all individuals in the classroom.

Summary

To address the complex needs of students who have experienced significant trauma, a collaborative team effort is required. Teaching staff must ensure that they are building trusting relationships with children and children's caregivers in order to be able to have difficult conversations with them and teach them about the importance of early childhood mental health. Teaching staff must create a safe environment for all children, guaranteeing that everyone will be respected, heard, and cared for. Through setting up a safe environment and with adult guidance, healthy peer-to-peer relationships can begin to form. Every individual invested in children must

be willing to play an active role in children's mental health and their safety. I believe Helen

Keller said it best when she said, "Alone we can do so little, together we can do so much."

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