

How Does Childhood Trauma Affect Adulthood?

by

Jackelyn Lopez

Submitted to the Department of Psychology
School of Natural and Social Sciences
in partial fulfillment of the requirements
for the degree of Bachelor of Arts

Purchase College
State University of New York

May 2021

Sponsor: Dr. Meagan Curtis

Second Reader: Dr. Paul Siegel

Abstract

This review article explores the long-term effects of experiencing childhood trauma. Children who experience trauma, or adverse childhood events (ACEs), may not have the coping skills necessary to recover from the trauma, and contextual factors may contribute to the challenges of recovery. For instance, the quality of a child's attachment relationship with their caregiver can either set the stage for an easier recovery or can introduce additional challenges that threaten the recovery process. When ACEs are left untreated or the treatment has not been successful, children may experience symptoms of psychosis, may engage in excessive rumination, and may eventually develop depression or post-traumatic stress disorder (PTSD). The long-term effects of ACEs include threats to mental and physical health, as well as early mortality. This thesis explores the long-term impacts of ACEs as well as related topics, such as screening for ACEs and treatment approaches, while raising ideas for what direction future researchers should pursue.

Keywords: Childhood, trauma, mental illness, adulthood, ACEs, attachment style, and treatment.

Childhood Trauma

Childhood is complex. Many different variables can influence the course of development, leading to positive and negative outcomes. According to DeBellis and Zisk (2015), the actual definition of traumatic events involves exposure to harm, whether it is by accident, threatened, or actual. A child could experience trauma either directly or by witnessing a traumatizing event. Common examples of traumatic events that children experience include bullying, car accidents, terrorism, natural disasters, child maltreatment, exposure to domestic abuse, a serious injury, and/or sexual violence. This also includes psychological abuse, which is when the child experiences verbal abuse, blackmail, and unfair punishment. Psychological abuse often involves injury to the child. Emotional neglect usually involves the parents not giving enough attention and/or support to their child. When a child experiences sexual abuse, it is generally when the child is touched inappropriately (Hovens, 2015). Once a child is exposed to trauma, they can experience distress, post-traumatic stress disorder (PTSD), depression, anxiety, antisocial behavior, and substance abuse (DeBellis & Zisk, 2015).

This lit review will discuss the long-term psychological impacts of experiencing one or more traumatic events as well as factors that influence a child's ability to recover from these events, such as the quality of the attachment between the child and their caregiver and the development of healthy emotional coping strategies. This thesis will explore how childhood trauma is typically measured and the long-term impacts of trauma on physical health, mental health, and brain function. The relationship between repeated exposure to trauma and the dysfunction of the brain's emotional regulation systems will be explored, along with the behavioral and psychiatric consequences of dysfunctional emotional regulation.

This literature review will examine the data linking childhood trauma to different psychiatric illnesses, like depression, anxiety, and PTSD, as well as other negative outcomes, such as substance abuse, challenges with employment and social relationships, and repeating the cycle of maltreatment with their own offspring. With so many negative outcomes caused by traumas, it is important to identify the best forms of treatments for trauma survivors and to continue to explore screening methods for the early detection of trauma and maltreatment in young children. The thesis provides an overview of the long-term consequences of childhood trauma and the scope of the problem.

Measuring Trauma: ACEs Screening

The Adverse Childhood Experiences (ACEs) screening was created to help researchers find what traumatic experiences participants endured in their childhood (Felitti, 1998). Although the period the screening covers spans from birth to eighteen years old, and many children do experience adverse childhood events during their entire childhood, abuse has been observed more commonly in young children from birth to six years old. The ACEs screening has been used extensively in research and has helped researchers figure out that mortality is related to the number of traumatic experiences an adult has experienced in their childhood (Brown et al., 2009; Felitti et al., 1998).

The ACEs screening was developed by Felitti et al. (1998) who used it to explore the relationship between childhood trauma and its long-term effects on risk factors for mortality, such as mental and physical health. Over 8,000 individuals, ranging in age from nineteen to ninety-two years old, participated in the study. Of these, 52% were female, 79% were Caucasian, and 43% had a college education. All participants completed a medical evaluation and also completed the ACEs screening, which asked if the participant had experiences with abuse and

different forms of dysfunction at home during the first eighteen years of their life. The screening covers three categories of abuse: emotional, physical, and sexual abuse. It covers four categories of household dysfunction: witnessing substance abuse, mental illness, domestic abuse from a maternal caregiver, and criminal acts in the house. Participants were also asked questions regarding their health, with the researchers assessing risk factors for mortality like smoking, obesity, being inactive physically, experiencing depression and/or suicidal thoughts, alcohol or drug abuse, witnessing drug abuse in a parent, having a high number of sexual partners, and having a STD. The results showed that having more adverse experiences in childhood was associated with an increased probability of developing one or more of the risk factors for mortality. The increased level of risk was reflected in higher rates of alcoholism, drug use, higher numbers of sexual partners, and a higher incidence of STDs. Felitti and colleagues proposed that the reason participants reported behaviors like substance abuse and/or excessive sexual behaviors was because they adopted negative coping strategies in response to their ACEs. Suicide attempts were found to be common when a participant had experienced more than four categories of childhood trauma. Most of the participants (52%) self-reported to having experienced at least one form of childhood trauma while only 6.4% of participants reported to have experienced four or more exposures. Data showed that the most common adverse experiences participants had in their childhood included witnessing substance abuse in their home (25.6%) and living with a problem drinker or alcoholic (23.5%), and the least common exposure was witnessing criminal activity in their home (3.4%). Felitti and colleagues examined the link between causes of death and the amount of childhood traumas and risk factors participants experienced, specifically focusing on causes of death including heart, lung, and liver diseases, cancer, and self-reported poor health. Household dysfunction was found to be more of a cause of mortality than abuse.

The limitations of this study are similar to the limitations of most studies on childhood trauma; the ACEs questionnaire is a self-report measure, raising the possibility for the participant to over- or under-report their diseases or adverse childhood experiences.

The increased risk of mortality in individuals who had suffered ACEs was also observed by Brown et al. (2009). Over 17,337 participants, all eighteen years or older, were tracked in a longitudinal study. At the beginning of the study, each participant completed the ACEs screening and another questionnaire to report any medical conditions. The researchers then tracked the mortality of participants over time by linking the participants' ID numbers for the study to the National Death Index. When a participant's ID matched the index number, that was an indication that the participant had died. The data showed that 1,539 participants had died by the conclusion of the study. Participants who suffered from six or more ACEs had a higher risk of passing away twenty-years earlier than people who did not experience ACEs. The authors describe the effects of having multiple ACEs as synergistic; when a person experiences two or more ACEs, these experiences synergize and put the individual at an even greater risk of negative outcomes than the additive effects of each individual ACEs. The authors reported that no specific types of ACEs were associated with more negative outcomes than the other ACEs, but that the total number of ACEs was linked to mortality risk. Brown and colleagues found that seventy-five percent of deaths were associated with chronic diseases, most commonly heart diseases, strokes, and cancer. There was no relationship between gender and premature death. Suicide, sexual promiscuity, and substance abuse were risk factors for death that were strongly correlated to ACE's participants had reported, meaning these three risks factors were related to childhood trauma and negative life outcomes. Thus, experiencing trauma may have a life-long impact on the physical health of an individual and lead to early mortality.

ACEs can cause individuals to adopt negative coping strategies throughout childhood and adulthood that can increase the odds of premature death (Brown et al., 2009; Felitti et al., 1998). When a child experiences ACEs, the brain's stress regulation systems, such as the hypothalamic-pituitary-adrenal (HPA) axis, may become dysfunctional (Juruena et al., 2020), which in-turn can produce higher autonomic arousal and can potentially create stress responses. The child may develop poor socialization skills and negative attachments to caregivers and relationships throughout adulthood (Ainsworth, 1989; Bowlby, 1969). Adults can then develop negative health risks like diseases and disabilities, and mental illnesses, and negative lifestyles (Han et al., 2010). Hoven's (2015) research showed that many individuals with ACEs have a negative response to treatment and are more at risk for negative long-term consequences. All these factors create a higher risk of early mortality for people who have had ACEs.

The Importance of Security

Having a sense of security is important for children, especially at a young age, because it allows them to explore their environment with minimal fear of threat, trusting that their caregiver will always be there if needed. A child's sense of trust in a parent is reflected in the attachment relationship, the emotional bond between child and parent, a concept first introduced by John Bowlby (1969). Bowlby proposed that the quality of one's early bond with their caregiver has long-term consequences in adulthood, affecting mental health. When a baby has a sensitive and comprehending main caregiver, it allows them to develop and learn while feeling safe. The security of this early attachment is associated with the development of a good self-image and positive relationships with others throughout life. On the other hand, a child can develop anxious or avoidant attachments (Ainsworth et al., 1978), which occur when a child cannot fully rely on their primary caregivers for their security. Children with insecure attachments to caregivers may

form additional unhealthy relationships in school into adulthood because they may second-guess everyone's intentions (Ainsworth, 1989). People who have grown up with insecure attachments develop low self-esteem and self-image. When a person has anxious attachment, they are very dependent on other people and worry about people rejecting and abandoning them. Those with avoidant attachment are extremely self-independent and do not like expressing emotions with their significant other.

Extensive research has been done on the effects of attachment on mental health in adulthood and how the added experience of trauma may influence health outcomes. Han et al. (2010) noted that attachment patterns accounted for greater risk of developing depression in response to trauma than the abuse or maltreatment itself. Attachment style is thought to be a significant predictor of mental health outcomes in response to trauma because attachment is related to the development of emotional regulation strategies and coping skills (Allen, 2001; Schore, 2002), and one's attachment style may influence whether a person can cope with their trauma.

Emotional regulation can affect whether a child develops psychiatric illnesses. Emotional regulation is how the person responds to an experience with a spectrum of emotions. Childhood trauma can unbalance a person's regulation of emotion even more if the trauma was persistent (Huh et al., 2017). That is, the frequency and severity of the trauma can threaten a child's ability to regulate emotions in the face of future traumas and challenges, as can having an insecure attachment to one's caregiver (Han, 2010). When a person cannot successfully regulate their emotions, different psychiatric disorders may occur. Many of the studies this current thesis mentions will support this theory.

The quality of the attachment relationship between a child and their caregiver can determine if the child is liable for developing a mental illness in adulthood and the quality of future relationships. A child made to feel less than or insecure will not have the opportunity to develop healthy relationship patterns and may experience threats to their mental health. Han et al. (2010) investigated three categories of adult attachment patterns and how they related to childhood trauma and depression in adulthood. Their study included 401 participants diagnosed with depression who had experienced childhood trauma and who exhibited avoidant and anxious attachments. The researchers found that when caregivers displayed abuse or negligence towards the child, it was correlated with the child developing symptoms of depression and negative relationships in the future. As demonstrated by Ainsworth's earlier findings (1989), the relationship the child has formed with their caregiver forms the basis for their understanding of how to function in a relationship, and the same attachment style is often repeated in that individual's future relationships. A depressed person who has experienced childhood trauma may develop troublesome independence from or dependence on their partner and overthink the relationship. They might not show affection to their partner or may show too much affectioness and dependency on their partner in order to feel stable. The insecurity of the relationship with the caregiver carries into future relationships.

Generational Trauma

Abuse is a common cause of childhood trauma. Parents can be abusive towards their children, whether it is physical, sexual, and emotional, and this can begin at a very young age. Victims of abuse sometimes become abusers; a parent who experienced trauma in their own life is more likely to inflict trauma on their children. Yehuda et al. (2001) conducted a study to examine this cycle of abuse. Their research specifically investigated the offspring of Holocaust

survivors and compared how they were treated by their parents to the offspring of Jewish parents who had not been in the Holocaust. Each participant was asked the basic mental health questions from the DSM-IV to see if they displayed symptoms of any kind of mental illness. The study specifically wanted to look at PTSD and its association with childhood abuse and neglect. However, they also studied depression, anxiety, panic disorder, social phobias or other phobias, body dysmorphic disorder, substance abuse and eating disorders.

Participants had to list what types of traumas they experienced and rate the traumas by how much they affected them. Participants were also asked to report whether they had experienced abuse and how often certain abuses had occurred. Yehuda et al. gave participants a Parental PTSD Scale that asked for participants to list in detail what experiences their parents had in the Holocaust. They found that children of Holocaust survivors experienced higher rates of emotional, physical, and sexual abuse than children with parents who did not experience being in the Holocaust, as well as higher rates of neglect. Similar rates of females and males reported experiencing emotional and physical abuse, while it was more likely for females to report experiencing sexual abuse than males. The findings indicate that the impacts of trauma extend beyond the person directly effected by the initial trauma; parents who had experienced trauma and abuse during the Holocaust were more likely to inflict emotional abuse and neglect on their own children than those who hadn't been in the Holocaust. The cumulative traumas experienced by the parents in this study undoubtedly contributed to the dysfunction of their emotional regulation systems. This dysfunction would likely manifest in the types of parenting failures that are traumatic for children, such as emotional and physical abuse, perpetuating the trauma across generations. It is possible that maladaptive defense mechanisms are also at play.

Trauma and Mental Illness

Although a child's sense of security may be largely tied to parental care, not all threats to security come from caregivers. Events that disrupt physical security can induce trauma, but not all traumas lead to long-term mental illnesses. One group of researchers (Galletly et al., 2011) wanted to explore whether the trauma associated with environmental disasters like bushfires leads to psychotic symptoms. The longitudinal study examined whether experiencing a bushfire as a child was related to mental health outcomes observed in the adult 20 years later. Galletly and colleagues split participants into two groups: adults who had experienced bushfires and those who had not. The authors wanted to see if there were any differences between the groups on various mental health outcomes. The researchers gave participants a survey that included questions screening for delusions, negative thoughts, and a previous diagnosis of schizophrenia. Participants were also asked to complete questionnaires about experiences with traumas in addition to the bushfires and to rate each trauma according to how much it had affected them. Finally they were asked if they had had a history of dependence on alcohol and cannabis. Galletly et al. examined the associations between self-reported psychotic symptoms, the number of traumas the participant had suffered, and substance abuse. Both the wildfire group and control group took the psychosis screening and the data showed 6% of the participants exposed to the bushfires exhibited symptoms of psychosis as well as 5.2% of the participants in the control group, which indicates that the bushfires did not increase the rate of psychosis in those who had experienced the natural disaster. Those participants who screened positive for psychosis were found to have more traumatic experiences in their lifetime than participants who screened negative for psychosis. Furthermore, participants who exhibited symptoms of psychosis had higher chances of alcohol dependency than participants who screened negative for psychosis.

Participants who screened positive for psychosis also reported higher rates of alcohol and cannabis dependence than participants who screened negative. The results suggested that experiencing a natural disaster may be traumatic but does not appear to inflict the same types of negative mental health effects seen in cases of childhood abuse or other traumas that were inflicted intentionally on the victim. Victims of intentional harm learn that other people can pose a threat to safety and are not to be trusted, and a deliberate threat to one's personhood may cause chronic anxiety, depression, and other negative effects. Although experiencing a natural disaster can be associated with personal losses, such as the loss of a home or loved ones, the psychological impact of these losses would be far greater if they had been caused intentionally rather than by chance or accidental circumstances.

Trauma and Psychosis in Children

When examining the effects traumatic events can have on children, researchers commonly look for symptoms of psychosis. Psychosis is often screened for because it is one way a child learns to cope with their trauma, even if it is negative; it is a way for a child to escape their reality. These symptoms include suffering from hallucinations, delusions, and paranoia. When a child suffers from trauma, their chances of developing psychotic symptoms increase (Isvoranu et al., 2017; Kelleher et al., 2008). A child's view of the world can change completely because of their traumatic experiences. When children are young, they are more likely to develop psychotic symptoms because they do not have strategies for coping with their trauma (Arsenault et al., 2011). For example, if a girl experiences physical (or any) abuse as she grows up, the abuse will teach her that people are dangerous and can't be trusted. When the abuse is severe, the girl may perceive non-threatening events with fear and paranoia because she thinks that something dangerous will happen and views them as threatening (Kelleher et al., 2008). Past

researchers (Read et al., 2001) have observed that when a child develops psychotic symptoms, it is linked to deregulation of catecholamines, a class of neurotransmitters that are linked to the regulation of fear and stress responses, such as the fight-flight response, and dysfunction of the hypothalamic-pituitary-adrenal (HPA) axis, which is also related to the regulation of stress. These are communication systems to major organs and become dysfunctional when the child experiences severe stress (Jurueña et al., 2020). Chronic dysfunction of the HPA axis has been linked with the development of pathologies, including major depressive disorder and PTSD (Bowers & Yehuda, 2017).

The experience of childhood trauma may lead to a range of psychotic symptoms and disorders. This link was explored by Kelleher et al. (2008) with 211 participants between the ages of 12-15 years old. The participants and their parents were interviewed separately about whether the participant exhibited any psychotic symptoms, hallucinations, delusions, had ever been a victim of bullying, physical, and/or sexual abuse. Kelleher et al. reported that eighty-three of their 211 participants were diagnosed as having one or more Axis I disorders. According to the DSM-IV (American Psychiatric Association, 2013), Axis 1 corresponds to clinical disorders including mood disorders, psychotic disorders, dissociative disorders, eating disorders, and substance abuse disorders.

Kelleher et al.'s (2008) findings showed that children who experienced more traumas as a child had higher rates of psychotic symptoms. Their data showed that children who experienced physical abuse were six times more likely to report psychotic symptoms than those who hadn't experienced abuse. Interestingly, children who reported to be the victim of bullying would more likely turn into bullies themselves rather than show psychotic symptoms. Children who had witnessed psychical abuse and had been victims of abuse also had a higher chance of

being physically aggressive, mirroring the observations of Yehuda et al. (2001) that Holocaust survivors sometimes perpetuated abuse on their own children.

It is widely acknowledged that genetic factors influence mental health. Arseneault et al. (2011) conducted a longitudinal study in twins to examine whether genetic factors mediate the relationship between experiencing a trauma and the development of psychotic symptoms. The study, which examined 2,232 participants (55% monozygotic and 45% dizygotic twins), started when the participants were five years old and finished once the children were twelve years old. Researchers investigated if the twins experienced maltreatment, accidents, and/or bullying. At the beginning of the study, when the twins were five years old, interviewers asked the mothers questions about whether their children had been maltreated by anyone or bullied at school, and also asked if they were involved in any accidents. Teachers were asked to answer the same questions as the mother but by mail. Arseneault et al. then waited until twins were 12 years old to interview them by themselves about their childhood experiences and see if any of the children showed psychotic symptoms. Researchers investigated seven psychotic symptoms specifically related to delusions and hallucinations. The mothers' history of psychotic illness was also examined. The researchers considered the influence of genes, IQ, gender, and socioeconomic status.

The results (Arsenault et al., 2011) showed that psychotic symptoms can originate from trauma and the child generally shows those symptoms by the time they are twelve years old. Although the association between trauma and psychotic symptoms was very high for any trauma that included intentional harm and bullying, accidents were not the type of trauma that made children more vulnerable to psychotic symptoms (consistent with the findings of Galletly et al., 2011). The most common mental illnesses that resulted from childhood trauma were observed by

Arsenault et al. (2011) to be PTSD, depression, and conduct problems. Although genetic factors, IQ, and family poverty were significantly associated with psychotic symptoms, lifetime cumulative trauma was a much better predictor of psychotic symptoms than any of these other measures.

Arsenault et al. (2011) also pointed to a disparity between children's experiences and parental insight into those experiences and/or willingness to disclose. When the researchers observed the responses from both the children and mothers gave regarding whether the children have been bullied or not, it was more likely for the child to admit to being bullied rather than the mother; the mothers were more likely to deny that their children experienced bullying. This may reflect a limitation of the study's measurement methods. Although the children provided responses in the second phase of the study (at the age of 12), the information about the participants at age five was collected from mothers and teachers. There is a possibility that a five-year-old child is not good at expressing their emotions or is even scared to tell the truth, so the mother or teacher may have been unaware of instances of maltreatment or bullying. When reporting about events happening inside a child's home, there's also a strong possibility that the mother could negate the truth to avoid trouble with social services, and the child's teacher may lack insight. These factors can become confounding variables and can affect the accuracy of the results. It is likely that the rates of maltreatment noted here may be underreported, particularly at the age of five.

The rates of abuse and bullying reported by Arsenault et al. (2011) were based on data from 2,232 participants and out of those, 589 participants, or 26%, reported being a victim of abuse or bullying by age 12. It is a possibility that the children continued to experience maltreatment from parents or classmates as they grew older, potentially making their symptoms

worse. The mental health outcomes reported in the phase two sample do not reflect the long-term mental health outcomes of these participants, as their symptoms may have become more extensive as the participants grew older. Teens who have or are at risk of developing psychotic symptoms often develop psychiatric illnesses when they become adults (Arsenault et al., 2011). Depression is one of these illnesses.

Depression

There are eight types of depressive disorders a person can have, but this present thesis will mainly focus on chronic depressive disorder. For a person to be diagnosed with depression, a person needs to experience five or more symptoms for more than two weeks (American Psychiatric Association, 2013). Depression symptoms could be feeling hopeless with little to no interest or energy in everyday activities. The person can suffer changes in their appetite which can cause weight loss or gain and develop insomnia. The person's self-esteem can plummet drastically by feeling worthless or from irrational guilt, and it can become difficult to focus on tasks. The person can additionally have recurrent thoughts of suicide and death (American Psychiatric Association, 2013). The most common symptoms from the ones described are feelings of worthlessness, tense moods, and consequences on the person's cognitive functions. Biologically speaking, DeBellis and Zisk (2015) found that a person's corticotropin-releasing hormone (CRH) type 1 receptors are activated in the brain when they have depression. These receptors stimulate the production of cortisol, a hormone that is related to stress, fear, mood, and motivation. Thus, people who have chronic depression will have higher levels of cortisol in their brains, which might make it more difficult to regulate stress and mood.

There is a clear link between experiencing childhood trauma and developing symptoms of depression (Arsenault et al., 2011; Kim et al., 2017). Arsenault et al. (2011) observed that

depression was twice as likely to occur in those who had experienced childhood trauma than in those who had not. Some psychiatric illnesses, including depression and anxiety, are linked to rumination. Rumination is when a person focuses on negative moods and thoughts frequently and is associated with depressive feelings. Rumination can be the cause of why someone has persistent depressive feelings, as demonstrated in a study by Kim et al. (2017). Their research was conducted to test if rumination may be a mediating factor between childhood trauma and the development of depression. Over two hundred participants filled out questionnaires about any abuse or neglect they had experienced and the number of times they'd experienced said abuse. Participants were also asked to rate their rumination and describe what type of rumination it was. According to Kim et al., there are three different types of rumination: self-reproach, which is when the person blames themselves for having negative thoughts; contemplation, which is when the person is thinking about their depressive mood excessively and how it affects their personality; and depressive rumination, which is when the person's main focus is on depressive thoughts and mood. Mood itself was also measured in the study according to how often the participants reported feeling concerned or were tense. Kim et al. discovered from their results that rumination in fact was a mediating factor between childhood trauma and the person's mood, as measured according to symptoms of depression and anxiety. If a person has suffered from childhood trauma, their level of rumination was associated with the risk for them to develop symptoms of depression and anxiety. Rumination was a stronger mediator of the trauma-mood relationship in females than males, meaning that rumination influences mood more in female trauma survivors than in males. Childhood trauma has a large effect on mood, and mood disorders can be linked to self-harm and suicidal behavior. The therapeutic targeting of

rumination may be one way to try to improve long-term mental health outcomes in those who have experienced childhood trauma, especially in females.

The home environment and situational factors the child experiences can impact their development, positively or negatively. Hovens (2015) explained that childhood trauma is an enduring factor for mental illness, and situational factors can further contribute to depression or anxiety in adulthood. For a person who grows up lonely, in the working-class, and with low self-confidence, the risk of developing depression increases even more. Hovens found the risk of depression to be higher when the child specifically experienced emotional abuse and neglect. Nevertheless, other forms of abuse or neglect were still prevalent and associated with the development of depression or other mental illnesses. Additionally, parental loss posed an increased risk for depression in adulthood. However, researchers suggested this would be valid only if the child's caregiver relationship after the loss is toxic. For example, if a child's mother died and the father's relationship with the child was toxic, this situation creates a higher risk than if the father were gentle and kind. Divorce was also a risk factor for the child to develop depression in adulthood; there could also be a possibility that divorce could be more of a risk factor than the loss of a parent if the child's environment is toxic after the divorce. The toxic dynamic between parents in some cases can be worse than the loss of a parent because when a child loses a parent there is always the possibility that the one remaining is not toxic and will take care of the child.

The duration of one's battle with depression in adulthood has been linked to abuse during childhood. Negele et al. (2015) examined the link between common childhood traumas and the development of chronic depression in adulthood. There were 349 participants in the study who all experienced depression for twelve months or more. Participants were interviewed to see if

they had chronic depression and took a self-reported questionnaire on their childhood trauma experiences. The childhood trauma studied in this research was emotional and physical abuse/neglect and sexual abuse. Negele et al. reported that 75.6% of participants reported having at least one childhood trauma, and the highest number of traumatic experiences reported was five. Emotional abuse (60.7%) and neglect (51.9%) were reported more commonly than sexual abuse (25.2%); however, females were more likely to experience emotional and sexual abuse than male participants. The length of depression was associated with the person's history of parental overcontrol and maternal abuse. The more maternal and paternal abuse shown, the longer the longevity of the depression was.

Anxiety

Anxiety is one of the most common emotions; it makes a person fear various aspects of daily life. For instance, someone might have anxiety about situations that can cause social embarrassment or about being observed in what they are doing. Generalized Anxiety Disorder (GAD) and Social Anxiety Disorder (SAD) are often observed in related family members, suggesting a genetic component along with possible environmental components. A person with a genetic predisposition is vulnerable, and the environment and experiences they grow up with can activate this vulnerability, resulting in illness.

Anxiety disorders are associated with excessive activity in the locus coeruleus, a part of the brain that influences the sympathetic nervous system and controls the flight or fight response (DeBellis & Zisk, 2015). When the locus coeruleus is activated, norepinephrine is released throughout the brain. This can result in a person experiencing anxiety symptoms. Excessive activation of this brain area is associated with the development of PTSD.

It has been demonstrated that there has been a relationship between number of traumas experienced and social anxiety disorder. Kuo and colleagues (2010) studied the relationship between social anxiety and childhood trauma in adults. They conducted a study with 102 participants to see if participants with SAD had experienced more emotional abuse, neglect, sexual abuse, and physical abuse as a child than the control, healthy participants without SAD. Participants were given a questionnaire that asked if they experienced abuse or neglect as a child and, if so, what type and how frequently. Another questionnaire was given to assess the severity of social anxiety each participant had by using the Social Interaction Anxiety Scale (Heimberg et al., 1992) and the State-Trait Anxiety Inventory (Spielberger, 2010). The Social Interaction Anxiety Scale measures anxiety by letting the participant describe how they would react cognitively and how they would behave in a variety of scenarios that included social interaction in groups. Meanwhile the State-Trait Anxiety Inventory measures the frequency of how many times the participant experiences anxiety symptoms and captures both state anxiety--anxiety about a specific event--as well as trait anxiety, which is not situation-specific and is reflective of more generalized, chronic anxiety. Depression was also taken into account; the researchers tested if participants had depressive symptoms the week prior to the actual study. Self-esteem was also studied by asking participants to measure their attitude and beliefs when regarding their self-worth (Kuo et al., 2010).

Kuo et al. (2010) found participants with SAD reported more emotional abuse/neglect experienced in their childhood than the control group. The researchers also reported that participants were more likely to experience SAD in their childhood than in adulthood when they experienced physical abuse/neglect and sexual abuse. In the SAD group, males experienced more physical abuse than females did. It was concluded that males were more prone to experience

violence than females. Essentially, the researchers discovered anxiety tended to be more visible in adults who have experienced childhood trauma than adults who did not.

PTSD

Excessive activation of the locus coeruleus not only produces anxiety; it can result in the person experiencing symptoms of PTSD (DeBellis & Zisk, 2015). When a person has either witnessed or experienced an event where their life was threatened or that resulted in a serious injury, they may have a higher vulnerability to develop PTSD. Loss of a loved one and natural disasters are also common events that can develop into PTSD. The person's immediate response to the event could be horror and the feeling of helplessness. According to American Psychiatric Association (2013), to be diagnosed with PTSD a series of symptoms need to be present for more than one month. Symptoms can include flashbacks, night terrors, being actively distressed, trying to avoid places or feelings where their memory of traumatic events can be triggered, angry behavior, and/or self-destructive behavior. There are different types of PTSD a person can experience; they are called Type I and Type II. Type I occurs when the person recovers quickly from a traumatic experience, unlike Type II, where the person suffers a more long-term effect of PTSD (Smucker & Dancu, 1999). Both types of PTSD need to be taken seriously and treated as soon as possible. When Type II PTSD is left untreated, the person can become suicidal, develop a substance abuse or eating disorder, and have a hard time developing relationships.

Children begin to form autobiographical memories starting between two and four years old. Children who suffer with emotional issues and mental disorders at the age of six years old are more at risk to develop PTSD than children who do not suffer from issues or disorders (Smucker & Dancu, 1999). The environment can also be a risk factor to develop any illness (Galletly et al., 2011). The DSM-V identifies the following environmental risk factors for the

development of PTSD in children: they grew up in low-economic-and-social class, experienced family dysfunction, lost a caregiver, had a low IQ, and/or were considered a minority (American Psychiatric Association, 2013).

PTSD is more commonly developed not from the actual event the person experienced but more from the dysfunctional emotional regulation and processing of the event that occurred (Smucker & Dancu, 1999). If the person regains their ability to regulate emotions surrounding the trauma, there is a possibility of the symptoms of PTSD decreasing. The brain is always adapting to new routines and environments, but when trauma occurs, the person's lack of emotional regulation prevents their ability to adapt to the new environment, often from amnesia, denial, and other strategies to dissociate from the experience. This is why a person with PTSD symptoms can take a long time to fully recover from their trauma, and many never recover.

According to the DSM-V, females are more likely to develop PTSD than males (American Psychiatric Association, 2013). Specifically, females might have a higher rate for PTSD because they are more likely to be exposed to abusive situations than men. Han (2010) mentioned that males were more exposed to trauma in general, not just trauma in childhood, but females tend to report feelings of distress from trauma they have experienced at higher rates than males. Males are more likely to underreport and express their distress with negative behavioral symptoms. He also found that it is common for people during their lifetime to be exposed to a traumatic event but only ten percent of these people develop symptoms of PTSD, and some can also develop other mental and psychological health issues. Risk factors such as environmental factors mentioned earlier may explain these differences.

Behavioral Consequences in Adulthood

As seen in various studies mentioned in the present paper, childhood trauma not only can make a person develop mental illnesses, but it can also affect their lifestyle. For instance, Felitti et al. (1998) reported that participants who had experienced more ACEs displayed higher rates of alcoholism, drug use, sexual promiscuity, and were at risk for poor socialization skills and body health issues. Clearly, ACEs are associated with higher levels of risk-taking behaviors. There is evidence that ACEs are also associated with increased risk for illegal activity and incarceration (Messina & Grella, 2006). Messina and Grella (2006) recruited 500 participants from a female's prison to examine the connection between incarceration and childhood trauma. Prior to incarceration, forty percent of participants were employed, and sixty percent were unemployed. The females who were unemployed were more likely to report participating in non-legal activities to earn income. The study had participants self-report traumatic events from their childhood before the age of sixteen years old, focusing on physical abuse/neglect, emotional abuse/neglect, and sexual abuse, as well as household dysfunction like family violence, a divorce between parents, and being in foster care. The researchers also investigated if participants were diagnosed with any health problems by a doctor. Age, race, and marital status were also examined, as well as whether each participant was a teen-mom, had lost custody of their children, had experienced homeless, used drugs, or had any conduct disorders.

Messina and Grella (2006) reported that health had a strong correlation with childhood trauma; the more traumatic experiences a person reported, the more health-related issues occurred. The researchers found that a preponderance of incarcerated females experienced five to seven traumatic events in their childhood, and only 15.7% of incarcerated females did not experience childhood trauma. Females who reported more than five traumatic events were more inclined to be involved in crime and substance abuse starting from fifteen years old. Messina and

Grella's study demonstrated that trauma is associated with negative choices in adulthood. When a traumatic event during childhood is left untreated, people often tend to find an outlet to escape. Crimes and substance abuse are among the most common outlets people seek. Females who suffered sexual abuse as a child had an increased chance of having an STD or other gynecological issues. Han (2010) also discussed that experiencing a traumatic childhood can lead to substance abuse, and the substance use develops into negative consequences. When a person partakes in an addiction, it can lead to failed relationships (intimate or not) and can lead to unemployment because the substance disables the person's ability to work.

Messina and Grella's study (2006) brought awareness to the number of adolescents and younger children affected by misconduct and criminal activity. Most of the females in this study suffered from childhood abuse that was linked to mental illnesses and health issues in adulthood. The rates of mental illness were measured according to the use of prescription medication to treat a mental illness as well as the number of suicide attempts. Twenty-six percent of participants who reported no experience with childhood trauma were being treated with psychotropic medication, while 55% of participants who had experienced five or more traumatic experiences in their childhood were being treated with medication. Similarly, 17% of participants who did not experience childhood trauma reported attempting suicide while 49% of participants who did experience childhood trauma had attempted suicide. As the number of traumatic events in childhood increased, the possibility of mental health issues increased as well, the most common of which were depression, anxiety, PTSD, and eating disorders. For example, the authors observed that if an inmate reported living through seven traumatic events as a child, the probability of receiving treatment for mental health increased by 980%, relative to those who reported no ACEs.

One limitation of this study is that the health data required prior diagnosis by a physician, and in a population that may have barriers accessing healthcare, the health conditions may be underreported in this study. For instance, only 18% of participants in this study had access to a private physician, and 43% reported using a public health clinic. The low rates of access to a healthcare provider leaves this population at a disadvantage when it comes to obtaining diagnoses for mental illnesses, let alone proper treatment.

Substance abuse is commonly observed in those who suffer from various mental illnesses. Substances like alcohol and drugs may provide a sense of temporary relief from trauma. The chances of developing substance abuse, specifically alcohol abuse, increases as the number of childhood traumatic events increases (Messina & Grella, 2006). According to Bowlby's (1969) proposition, childhood abuse from primary caregivers is associated with substance abuse and depression in adulthood. A person abusing substances can become unemployed and experience interpersonal conflict. Han (2010) found that children's attachment styles with parents appear to play an important role in whether the traumatic events one experiences eventually lead to substance abuse and mental illness in adulthood.

When a person experiences childhood trauma, their brain function is affected. For example, as previously stated, dysfunction of the HPA axis is associated with poor emotional regulation, and hyperactivation of the locus coeruleus can lead to anxiety and PTSD. When trauma interferes with a healthy brain, it can negatively affect emotional regulation circuits. It lowers a person's ability to distinguish right from wrong and regulate behaviors (DeBellis & Zisk 2015). The failed emotional regulation attempts may lead a person to substance abuse as an alternative regulation strategy.

Treatments

Adult survivors of childhood trauma are often treated with psychotropic medications and psychotherapeutic approaches, or a combination thereof, to target the mental health symptoms that result from the trauma. The word psychotropic is the broad term for medications that are intended to improve mood, thought, and perception. Nemeroff et al. (2003) conducted a study to examine what type of treatment would be better for adult patients who had experienced childhood trauma, psychotropic medication or psychotherapy. Over 600 patients participated and were all diagnosed with persistent mental disorders. Participants had to fill out a self-report questionnaire to inform the researchers about what kinds of childhood trauma they experienced, if any. To measure any progress with each treatment, the researchers administered a depression scale to participants at the start of the study and twelve-weeks after treatment. The treatments were either nefazodone or Cognitive Behavioral Analysis System of Psychotherapy (CBASP) alone or used together.

Nefazodone is one type of antidepressant (and has since been withdrawn from the market), and CBASP is a type of psychotherapy that includes two forms of interactional therapy (Nemeroff et al., 2003). Cognitive-behavioral therapy is a form of CBASP that helps patients change their negative thinking and behavioral patterns. Commonly, cognitive-behavior therapy includes exposure therapy in which individuals face their problems head-on. Another form of CBASP is interpersonal therapy, which helps the person talk about their feelings and build positive relationships. The results concluded that participants with depression who suffered childhood trauma saw better improvement rates with the combination of both treatments and psychotherapy alone than treatment with nefazodone alone which suggests that those with childhood trauma have an illness that is more psychological than biological. For participants with no childhood trauma who suffered from depression, the combination of nefazodone and

psychotherapy worked better than either treatment alone, or when only one type of treatment was used, there was no difference in efficacy between the two treatments. This study demonstrated that different methods of treating depression may be preferable, depending if the participant experienced childhood trauma or not. Although a combination of therapy and antidepressant medication is the most effective approach for treating depression in those with and without childhood trauma, psychotherapy alone seems to hold greater benefits for trauma victims than it does for those whose depression does not stem from trauma.

There are various psychotherapies and antidepressants, and this study (Nemeroff et al., 2003) only focused on one of each treatment. It is important to explore many different types of treatments and see which are optimal. For depression specifically, a last-resort treatment besides the CBASP or antidepressants is electroconvulsive therapy (ECT). This type of treatment is sometimes used in individuals who have not responded to other forms of treatment. ECT involves getting small electric currents applied to the head to produce a seizure in the brain. The goal with these seizures is to rewire certain circuits in the brain and reverse the symptoms of depression, essentially.

When people find the treatment that works best for them, it can help reduce the severity of trauma and positively change their life. Treatment of childhood trauma during childhood is optimal. Creating more early prevention programs for children to seek treatment may help prevent the trauma from developing into long-term mental illnesses. The more help that is available to a child, the less likely they are to develop mental illnesses or have negative consequences in adulthood. Early interventions also decrease the possibility of people becoming incarcerated later in life (Messina & Grella, 2006). Messina and Grella reported high rates of symptom relapse in participants who had received psychotherapy treatments. In patients who

were chronically depressed, antidepressant medications generally did not alleviate symptoms, and those who experienced symptom reduction generally relapsed within a year. Messina and Grella also found that inmates who had depression were more likely to involve themselves in criminal activity multiple times. Every-time an inmate was convicted of a crime, their likelihood of future convictions rose higher. Because of the high rates of symptom relapse and the association between depression and engagement in criminal activity, the long-term consequences of failing to treat trauma during childhood can be very costly.

Multisystemic therapy (MST) is a family- and community-based therapy that is used to treat children who are psychiatrically hospitalized or in prison and who also show severe mental health issues (Henggeler, 1999). The objective of MST is to provide help for troubled children by going to the child's home and school to provide awareness of changes that can be made to support the child. Multisystemic therapy includes various different forms of therapies and intense interventions that patients undergo for at least four to six months. Each intervention targets specific behaviors the child needs to improve on. Therapies given can be cognitive-behavior therapy and different forms of family therapies. The therapies that are integrated with the child's social system in their community, and family members are the ones to begin the interventions. This form of therapy helps families receive guidance on how to apply new methods of lifestyles for the child to recover. MST acknowledges the many risk-factors that could be influencing the mental health issues or conduct issues and awards positive changes in behavior and in the home environment. MST interventions are always tailored to the developmental stage the child is in to best promote change. A potential downside of multisystemic therapy is that it involves not just the child's family but the entire community. There could be a chance that the types of recreational programs given in the specific community are not effective and the child continues

with their mental illness or negative behavior. However, Henggeler noted that this type of therapy could lessen the severity of the child's antisocial behavior.

Programs designed to prevent maltreatment are essential. There can be home visits that ensure the child is okay and is acquiring close attention. Home visitation programs in the first two years of a child's life have been shown to successfully reduce rates of neglect and abuse as well as the frequency of child punishment and the number of visits that a child makes to the emergency room (Olds et al., 1986). These results were obtained from a sample of first-time parents, who were teenagers, not married, and from a low socioeconomic class.

Interventions to train and support new parents can prevent maltreatment. Providing resources to parents, such as mental health services and emotional support, may reduce the stressors that the parents face and enable them to provide more responsive care to their children (Bartlett et al., 2017). If parents undergo treatment before the child is born, it can stop future abuse and trauma (DeBellis & Zisk, 2015). Anonymous meetings are available for future parents to talk to others about how they feel and ask how to avoid causing trauma to their child. However, there are barriers to ensuring that parents receive treatment. Parents may not show risk factors for abusive behavior or may not care to get help.

Parenting strategies may help alleviate some of the long-term effects of a traumatic event. For instance, parents who respond to their child with warmth after the child has experienced a trauma may reduce the likelihood of the child developing PTSD, whereas parents who respond by either avoiding or overprotecting their child may increase the likelihood of the child developing PTSD (Ehlers, Mayou, & Bryant, 2003), as these behaviors may increase the level of stress and fear the child is experiencing.

Early care and education programs may enable children to establish trust with a professional, who may provide some of the stability that the child may be lacking in their home environment. By working with an early care professional, a child may learn how to process events and develop coping skills and self-regulation strategies (Bartlett et al., 2017). Children who survived multiple traumatic experiences may, with early treatment, have a chance to excel like children who went through fewer traumatic experiences. To have the most effective treatment, the person who holds the most responsibility, the therapist needs to review the guidelines and treat their patients to the best of their ability using trauma-informed care (Felitti, 1998). When treatments are effective, there is a higher possibility for the patient's brain to regain normal function in the systems connected with stress responses and emotion regulation. When people receive treatments for their childhood trauma, it can reduce mental, emotional, and physical pain. Early treatment may have an economic impact as well, as it would potentially reduce the thousands of dollars people spend on the treatment of mental illnesses and substance abuse (Fang et al., 2012). If the child is treated from a young age, it may prevent negative behaviors associated with dysfunctional emotional regulation and other negative life consequences, giving the child an opportunity to become successful and have a better life.

Conclusions and Future Research

Various researchers have reported links between adult mental illnesses and childhood trauma. The abuses in childhood that were most commonly found to be directly linked to mental illnesses were physical, emotional, and sexual abuse in both males and females. Moreover, when a child experiences traumatic events, the stress may cause dysfunction of the emotional regulation systems in the brain (De Bellis & Zisk, 2014), and when that child grows up, this dysfunction may cause them to mistreat their own offspring, perpetuating the toxic cycle of

abuse (Yehuda et al., 2001). Most sources of childhood trauma occur in the home, leading to a repeated cycle of abuse between the caregiver and child. Because the child's recovery from the trauma may also be greatly influenced by the quality of their attachment relationship to their caregiver (Han, 2010), interventions and training programs that target the behavior of parents are crucial components of preventing further childhood trauma and providing the type of home environment that can support the child's recovery (Bartlett et al., 2017).

Future research on childhood trauma should examine new approaches to screening children for signs of trauma. The ACEs screening by Felitti et al. (1998) has been popular to screen adult participants with. However, this screening is not appropriate for detecting abuse in young children and babies. It is important to study which screenings are most effective for detecting childhood trauma in preverbal and young children. Arsenault et al. (2011) thought it would be essential for doctors to screen all child patients to investigate if they have experienced trauma. If doctors screen all children, there will be a chance to detect and reduce trauma early on. The limitation of this approach is that children from families who cannot afford to seek help and healthcare would not benefit from this type of routine screening.

Future research should also examine different interventions and treatments to determine which approaches will be most optimal for a child and their family. Perhaps studying more treatments can reduce the trial-and-error process a patient has to go through when seeking care. It can be crucial to find the best treatments for not only the child who is receiving maltreatment but also the parents and help raise awareness of prevention and intervention programs. In 2008 just in the United States alone, \$124 billion dollars was spent treating the consequences of childhood maltreatment (Fang et al., 2012). These costs included medical expenses for treating children, child-welfare agency expenses, criminal involvement costs, special education, etc. Prevention

programs and other forms of treatment can be promoted in clinics and schools. When these forms of treatments are promoted, it allows more people from various social-economic classes to become aware of treatments in order for them or their child to get help. Ideally, if there is more awareness of the resources available for receiving immediate help, support, and treatment after experiencing childhood trauma, it can reduce the amount of money that the child may otherwise have to spend later in life addressing the consequences of the untreated trauma (Fang et al., 2012). This may enable the child to use that money instead for their future education or living expenses.

When promoting programs and treatments, it is important to ensure that children and caregivers' social and economic status is taken into consideration so that access to healthcare does not become a barrier to treatment. This way, all children can receive support because healthcare might not be accessible to everyone. There should be free public healthcare just like free public education for low SES (social-economic-status) children to have a chance to get treatment if they experience trauma.

Another important consideration for effective treatment is to tailor treatments to the child's developmental stage. Depending on the age and prognosis of the child, some treatments may be better for them than others, and researchers should study the best treatments for each developmental stage and prognosis. Certain symptoms may serve as warning signs for future mental illnesses, and by disrupting the patterns of thought, emotion, and behavior that are associated with these symptoms, it may be possible to prevent further development of the illness. Kim et al. (2017) studied the relationship between rumination, mood, and mental illness in participants who suffered childhood trauma. They found that rumination was directly linked to developing depression. Methods for intervening with rumination need to be studied to lower the

possibility of developing depression. Finding specific treatments that target rumination in children may progressively prevent the development of a mental illness and a negative view in life early on.

As mentioned earlier in the thesis, emotional regulation plays a part in predicting the severity of a person developing a mental illness. Depending on how a person copes with childhood trauma, it can heavily influence mental health in adulthood, positively or negatively (Han, 2010). Children might not know or understand how to cope with traumatic experiences, and it leads to dysfunction in emotional regulation and affects the brain negatively. Researchers need to study treatment programs that target coping mechanisms and determine which works best for children who have experienced trauma and maltreatment. Programs that help children learn to cope with their traumas and abuse can prevent them from adopting maladaptive coping behaviors. It would be crucial to identify in these studies the longevity of the effects of the treatments and if they prevent the development of depression, anxiety, and PTSD. It would be important to consider what treatments are best to restore normal brain functions to areas most affected by trauma. Just like any other treatment, it is imperative to investigate methods that teach children how to cope and manage stress depending on their developmental stage. Considering that the field of child development is always progressing, treatments and research should be kept current. Researching childhood trauma can lessen the percentage of children involved with maltreatment and abuse to prevent a lifetime of negative consequences.

References

- Ainsworth, M. D. S. (1989). Attachment beyond infancy. *American Psychologist*, 44(4), 709-716.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situations*. Hillsdale, NJ: Erlbaum.
- Allen, J. (2001). *Traumatic relationships and serious mental disorders*. Chichester, England: Wiley & Sons.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Arseneault, L., Cannon, M., Fisher, H. L., Polanczyk, G., Moffitt, T. E., & Caspi, A. (2011). Childhood trauma and children's emerging psychotic symptoms: A genetically sensitive longitudinal cohort study. *American Journal of Psychiatry*, 168(1), 65-72. <https://doi.org/10.1176/appi.ajp.2010.10040567>
- Bartlett, J. D., Smith, S., & Bringewatt, E. (2017). *Helping young children who have experienced trauma: Policies and strategies for early care and education*. Bethesda, MD: Child Trends. Available from: <https://www.childtrends.org/publications/ecetrauma>
- Bowers, M. E. & Yehuda, R. (2017). Neuroendocrinology of Posttraumatic Stress Disorder: Focus on the HPA Axis. In G. Fink (Ed.) *Stress: Neuroendocrinology and neurobiology, Handbook of stress series, Vol. 2*, pp. 165-172. Academic Press.
- Bowlby, J. (1969). *Attachment and loss*. New York: Basic Books.
- Brown, D. W., Anda, R. F., Tiemeier, H., Felitti, V. J., Edwards, V. J., Croft, J. B., & Giles, W. H. (2009). Adverse childhood experiences and the risk of premature mortality. *American Journal of Preventive Medicine*, 37(5), 389-396.

- De Bellis, M. D., & Zisk, A. (2014). The biological effects of childhood trauma. *Child and Adolescent Psychiatric Clinics of North America*, 23(2), 185-222.
- Ehlers, A., Mayou, R. A., & Bryant, B. (2003). Cognitive predictors of posttraumatic stress disorder in children: Results of a prospective longitudinal study. *Behaviour, Research and Therapy*, 4, 1–10.
- Fang, X., Brown, D. S., Florence, C. S., & Mercy, J. A. (2012). The economic burden of child maltreatment in the United States and implications for prevention. *Child abuse & neglect*, 36(2), 156–165. <https://doi.org/10.1016/j.chiabu.2011.10.006>
- Galletly, C., Van Hooff, M., & McFarlane, A. (2011). Psychotic symptoms in young adults exposed to childhood trauma—A 20-year follow-up study. *Schizophrenia Research*, 127(1), 76–82.
- Han, G. (2010). *Adult attachment patterns, mental representation of self, and faith: Mediators of childhood trauma and affect-behavior regulations in adulthood*. Doctoral Dissertation, University of North Texas.
- Heimberg, R. G., Mueller, G. P., Holt, C. S., Hope, D. A., & Liebowitz, M. R. (1992). Assessment of anxiety in social interaction and being observed by others: The Social Interaction Anxiety Scale and the Social Phobia Scale. *Behavior Therapy*, 23(1), 53-73. <https://doi.org/10.1016/j.schres.2010.12.010>
- Henggeler, S. W., Schoenwald, S. K., Borduin, C. M., Rowland, M. D., Cunningham, P. B. (2009). *Multisystemic therapy for antisocial behavior in children and adolescents, second edition*. United States: Guilford Publications.
- Hovens, J. G. F. M. (2015). *Emotional scars: Impact of childhood trauma on depressive and anxiety disorders*. Doctoral Dissertation, Leiden University.

- Hovens, J., Wiersma, J., Giltay, E., van Oppen, P., Spinhoven, P., Penninx, B., & Zitman, F. (2010). Childhood life events and childhood trauma in adult patients with depressive, anxiety and comorbid disorders vs. controls. *Acta Psychiatrica Scandinavica*, *122*(1), 66–74. <https://doi.org/10.1111/j.1600-0447.2009.01491.x>
- Huh, H. J., Kim, K. H., Lee, H. K., & Chae, J. H. (2017). The relationship between childhood trauma and the severity of adulthood depression and anxiety symptoms in a clinical sample: The mediating role of cognitive emotion regulation strategies. *Journal of Affective Disorders*, *213*, 44-50.
- Isvoranu, A. M., van Borkulo, C. D., Boyette, L. L., Wigman, J. T., Vinkers, C. H., Borsboom, D., & Group Investigators. (2016). A network approach to psychosis: Pathways between childhood trauma and psychotic symptoms. *Schizophrenia Bulletin*, *43*(1), 187-196. <https://doi.org/10.1093/schbul/sbw055>
- Juruena, M.F., Eror, F., Cleare, A.J., & Young, A.H. (2020) The role of early life stress in HPA axis and anxiety. In: Kim YK. (eds) *Anxiety Disorders. Advances in Experimental Medicine and Biology*, vol 1191, pp. 141-153. Springer, Singapore. https://doi.org/10.1007/978-981-32-9705-0_9
- Kim, J. S., Jin, M. J., Jung, W., Hahn, S. W., & Lee, S. H. (2017). Rumination as a mediator between childhood trauma and adulthood depression/anxiety in non-clinical participants. *Frontiers in Psychology*, *8*, 1597. <https://doi.org/10.3389/fpsyg.2017.01597>
- Kelleher, I., Harley, M., Lynch, F., Arseneault, L., Fitzpatrick, C., & Cannon, M. (2008). Associations between childhood trauma, bullying and psychotic symptoms among a school-based adolescent sample. *The British Journal of Psychiatry*, *193*(5), 378-382. DOI: 10.1192/bjp.bp.108.049536

- Kuo, J. R., Goldin, P. R., Werner, K., Heimberg, R. G., & Gross, J. J. (2011).
Journal of Anxiety Disorders, 25(4), 467–473.
<https://doi.org/10.1016/j.janxdis.2010.11.011>
- Messina, N., & Grella, C. (2006). Childhood trauma and women's health outcomes in a California prison population. *American Journal of Public Health*, 96(10), 1842-1848.
- Negele, A., Kaufhold, J., Kallenbach, L., & Leuzinger-Bohleber, M. (2015). Childhood trauma and its relation to chronic depression in adulthood. *Depression Research and Treatment*. Article 650804. <https://doi.org/10.1155/2015/650804>
- Nemeroff, C. B., Heim, C. M., Thase, M. E., Klein, D. N., Rush, A. J., Schatzberg, A. F., ... & Keller, M. B. (2003). Differential responses to psychotherapy versus pharmacotherapy in patients with chronic forms of major depression and childhood trauma. *Proceedings of the National Academy of Sciences*, 100(24), 14293-14296.
- Olds, D. L., Henderson, C. R., Chamberlin, R., & Tatelbaum, R. (1986). Preventing child abuse and neglect: a randomized trial of nurse home visitation. *Pediatrics*, 78(1), 65-78.
- Read, J., Perry, B. D., Moskowitz, A., & Connolly, J. (2001). The contribution of early traumatic events to schizophrenia in some patients: A traumagenic neurodevelopmental model. *Psychiatry*, 64, 319-345.
- Schore, A. N. (2002). Advances in neuropsychanalysis, attachment theory, and trauma research: Implications for self psychology. *Psychoanalytic Inquiry*, 22(3), 433-484.
- Smucker, M. R., & Dancu, C. V. (1999). *Cognitive-behavioral treatment for adult survivors of childhood trauma: Imagery rescripting and reprocessing*. New York: Rowman & Littlefield Publishers, Inc.

Spielberger, C. D., Gonzalez-Reigosa, F., Martinez-Urrutia, A., Natalicio, L., & Natalicio, D. S. (1971). Development of the Spanish edition of the state-trait anxiety inventory.

Interamerican Journal of Psychology, 5(3-4), 145-158.

Wiersma, J. E., Hovens, J. G., van Oppen, P., Giltay, E. J., van Schaik, D. J., Beekman, A. T., & Penninx, B. W. (2009). The importance of childhood trauma and childhood life events for chronicity of depression in adults. *Journal of Clinical Psychiatry*, 70(7), 983.

Yehuda, R., Halligan S. L., & Grossman, Robert. (2001). Childhood trauma and risk for PTSD: Relationship to intergenerational effects of trauma, parental PTSD, and cortisol excretion. *Development and Psychopathology*, 13(3), 733-753. DOI: 10.1017/S0954579401003170.