Childhood Trauma and Attachment Difficulties Emerging in Adult Life

by

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Abstract

The present capstone seeks to analyze traumas faced during childhood, difficulties, and barriers in forming healthy/secure attachments, and possible ways in which these can affect and emerge in adult life - ranging from early adulthood into late adulthood. It will furthermore analyze how traumas and insecure attachments formed during childhood can be passed onto that individual's future offspring, in an intergenerational cycle. There are limited studies showing the link between early childhood trauma and mental health issues, such as depression, anxiety, post-traumatic stress disorder, and substance-use disorder, in late adulthood.

Keywords: attachment, attachment styles, trauma, mental health, late adulthood, relationships

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Chapter One: Introduction

Early childhood experiences can affect and shape an individual in later stages of life, extending until late adulthood. During transformative phases of life, such as childhood and adolescence, a child will be building a relationship with their caregivers. These relationships, or attachments, are important in shaping the child's beliefs on self-worth, capacity to relate to others socially, and capacity to self-regulate (Friend, 2012). The repetition of daily life experiences with the child's attachment figures will lead to the acquisition of information about the caregivers' availability, responsiveness, and sensitivity to the child's needs (Dykas & Cassidy, 2011). Experiences in relationships with caregivers during childhood described as insecure (Bowlby, 1960) can lead to anxiety and reduced capacity to manage stress oneself (Wedekind et al., 2016). These attachment styles, acquired at a young age, could affect interpersonal functioning later on in life due to their relative stability throughout a lifespan (Assche, 2013; as cited in Assche et al., 2019). In the early years of life, exposure to interpersonal trauma also has a long-lasting impact on the individual and can cause emotional and cognitive impairments (Fortenbaugh et al., 2017). Exposure to trauma can severely impact the formation of secure attachments, creating an unconscious pattern and a cycle that will be taken into adult life (Banker et al., 2019).

Overview

Interpersonal traumas were shown to occur in 9.5%-32% of the general population and can affect the mental health of people of all ages. Research on older adults found that 25% of elderly people show signs of depression and 10% to 20% of elderly show signs of anxiety (Van Assche et al., 2019). To proceed with this study and to analyze if these could have resulted from early ages of life, a longitudinal method of analysis would be essential to observe the participants throughout their lifespan, beginning post-trauma, in youth or early adulthood, and ranging until later adulthood. Considering that the longitudinal studies on this

topic are scarce, this study will include analysis of a few longitudinal studies, cross-sectional studies, samples completing surveys to measure trauma in childhood using the Childhood Trauma Questionnaire (CTQ), and other surveys to measure depression, anxiety, and overall life satisfaction in adulthood.

Research about the stability of a child's attachment style throughout their lifetime has had mixed findings (Hasim et al., 2018). According to Bowlby (1977), the relationship formed between a child and caregiver builds a foundation shaping the child's internal working model (IWM), an understanding of the self, others, and the world around them. The IWM determines the child's future attachments, continuing into, yet to be formed, adult relationships (Ainsworth, 1989). Since the IWM is shaped during childhood, the pattern and environment a child grows up in might be repeated in adult attachments with peers and romantic partners.

Interpersonal traumas are present in the lives of 9.5% to 32% of the general population and it is commonly known that they can greatly affect and shape an individual in later stages of life, especially if the exposure occurs during transformative phases, such as childhood and adolescence (Fortenbaugh et al., 2017). The present literature review takes to the conclusion that childhood trauma and attachment difficulties in the early childhood years can negatively affect the lives and well-being of adults. Attachment theory and the neurobiology of individuals who have undergone traumatic experiences during childhood are clear signs of higher risks of mental health disorders in adulthood. Although there were no clear correlations shown with substance use disorder and childhood traumatic experiences, it was shown that childhood traumatic experiences were positively correlated with depression, anxiety (van Assche et al., 2019), PTSD, and lower levels of DT (Berenz et al., 2017), and were known to alter the development of the amygdala in the brain (Fortenbaugh et al., 2017).

Contribution to the Field

There have been limited longitudinal studies analyzing a child's trauma in childhood and how they emerge in adulthood. The literature found tends to focus on early childhood trauma and youth, leaving older adults out of the picture, therefore their inclusion is important. This capstone project will try to offer an understanding of attachment theory and trauma both in a lifespan and intergenerationally, as well as its somatic effects on the nervous system. By gathering available research on the matter, it will try to find new understandings of intergenerational trauma intervention for practitioners.

Purpose Statements

The present capstone seeks to analyze traumas faced during childhood, difficulties and barriers in forming healthy/secure attachments, and possible ways in which these can affect and emerge in adult life - ranging from early adulthood into late adulthood (over 65). This paper will furthermore analyze how traumas and insecure attachments formed during childhood can be passed onto that individual's future offspring, in an intergenerational cycle. There are limited studies showing the link between early childhood trauma and mental health issues, such as depression, anxiety, post-traumatic stress disorder, and substance-use disorder, in late adulthood. The central research question is: How do early childhood trauma and attachment formation difficulties impact/emerge in adulthood? The hypothesis for this study is that early childhood trauma and attachment difficulties impact mental health, well-being, and overall life satisfaction in adulthood. The paper will begin with a background to analyze the significance and context of the research question, citing previous studies and the evidence, then it will proceed to analyze relevant areas of literature, the procedures used to collect data, and the methods used for analysis.

Theoretical/Conceptual Framework

This capstone project will follow an attachment theory lens that explains how experiences in childhood create a 'configuration' of attachments throughout one's lifespan that shapes our view of the world, ourselves, and others. Attachment theory indicates that these early attachments will shape one's ability to relate to the world and self-regulate (van Assche, 2013). It also suggests that children need a secure, consistent, predictable, and emotionally available caregiver (Rosmalen, et al., 2016), and that lack thereof could lead to depression, anxiety, and psychopathology.

Positionality Statement

My interest in this topic stems from a curiosity about my personal childhood experiences with forming attachments and my experiences with traumatic relationships. This curiosity comes from wanting to learn more about myself and how these experiences might have shaped who I am today, how I relate to the world, and the type of attachments and relationships I make. As a child of divorce, I never developed a relationship with my mother and have always felt a sense of abandonment in that sense. On the other hand, I had my father as a primary caregiver and my aunt and grandmother as important attachment figures in my life.

Definition of Terms

Attachment Experiences

Experiences, typically of children, with their main attachment figures or caregivers (Dykas & Cassidy, 2000).

Attachment in Adulthood

Attachment styles are believed to be consistent throughout a lifespan, evolving into adult romantic relationships, friends, and family members. Some theorists believe, however, that

attachment styles can vary into anxious attachment, avoidant attachment, and secure attachment (Toof et al., 2020).

Attachment Style

An individual's pattern of behaviors, feelings, and expectations towards others in relationships. Based on Bowlby's Attachment Theory, an individual can have one out of four attachment styles: secure, insecure ambivalent, insecure-avoidant, and insecure-disorganized. It subsequently affects emotional regulation and sense of self (Mikulincer et al., 2003).

Attachment System

A security regulation system that is activated primarily in the presence of threat and monitors events, checking for danger or stress and the availability of an attachment figure to seek out safety (Bowlby, 1980; Polan & Hofer, 2016).

Attachment Theory

Based on the work of John Bowlby (1969/1982, 1973, 1980, 1982), the founder of the theory, it postulates that people are born with instinctive behaviors that are aimed at attracting and maintaining closeness to attachment figures in the hopes of gaining security both psychologically and physically (Mikulincer & Shaver, 2005; as cited in Richards & Schat, 2011).

Co-regulation

The ability to change body-based implicit and explicit interactions according to a partner's state of being, done so through neurobiological influence (Flores & Porges, 2017).

Defense Mechanism

"Unconscious mental control processes that aim to protect an individual from conflictual ideas and intolerable affects" (Freud, 1894/1962; as cited by Prunas et al., 2019).

Emotional Regulation

It is the process of regulating internal feelings and emotional states in situations where those might become altered (Eisenberg & Spinrad, 2014, p. 338).

Good-Enough Mother

A concept introduced by Winnicott (1971), a "good enough mother" is one that tends actively and adapts to the infant's needs and gradually, as the infant grows and becomes more able, lessens the adaptation and amount of immediate care; leading to a healthy concept of external reality (Winnicott, 1971).

Insecure Attachment

The lack of an attachment figure to offer psychological and physical security can lead to an insecure attachment. The child's basic needs are not met and they do not develop a sense of safety in their caregivers. It can be divided into insecure ambivalent, insecure-avoidant, and insecure disorganized (Toof et al., 2020; Main and Solomon, 1990).

Intergenerational Trauma

Form of psychological trauma that is transmitted within a family and within a community. Intergenerational trauma is a discrete process and form of psychological trauma transmitted within families and communities (Isobel et al., 2018).

Internal Working Models (IWM)

Automatic and unconscious representations of the self and others that monitor attachment-related experiences and eventually form the basis of one's behaviors. These can be cognitive and emotional (Pearlman & Courtois, 2005, p. 451).

Interoception

A person's ability to be aware of bodily sensation by directing their perception inwards (Levine et al., 2018). *Intergenerational Trauma*

Form of psychological trauma that is transmitted within a family and within a community. Intergenerational trauma is a discrete process and form of psychological trauma transmitted within families and communities (Isobel et al., 2018).

Neuroception

"Neuroception, as elaborated in polyvagal theory, is the capacity of the nervous system to evaluate risk in the environment without conscious awareness" (Flores & Porges, 2017, p. 203).

Polyvagal Theory

A theory proposed by Stephen Porges (1994) that describes how the nervous system evaluates risks in the environment emphasizing hierarchy in the autonomic nervous system and the role of the vagus nerve in social connections, fear response, and emotional regulation (Porges, 1994; as cited by Flores & Porges, 2017).

Relational Trauma

A form of trauma that happens within a relationship and is "usually familial, and often attachment specific" (Schore, 2002; as cited in Isobel et al., 2018, p. 1).

Secure Attachment

It is one of the four attachment styles, the individual can self-soothe in upsetting situations as well as seek the comfort of attachment figures without hesitation (Mikulincer et al., 2003).

Social Information Processing

The ways in which one perceives and interprets events done by another are typically related to mental internalizations of previous experiences in close relationships.

Trauma

A term used that encompasses events and experiences that are physically and emotionally harmful or life-threatening effects that are long-lasting and adverse to one's well-being (Isobel et al., 2018).

Vagal Brake

"An increased flexibility in the autonomic nervous system essential for managing rapidly changing arousal states and the efficient fluid shifting of emotional positions" (Flores & Porges, 2012; p. 209).

Outline of Capstone Chapters

Chapter one is aimed at introducing this Capstone Project, the topic to be reviewed and discussed, its importance to the field along with key findings and research, and the structure of the project. I have also provided important terminology that will be helpful in the chapters to come. Chapter two is aimed at discussing attachment theory and trauma and how these play a role in a child's life into adulthood and with future offspring. I will also discuss the links of intergenerational trauma to attachment formation and compare the impact on the nervous system of different attachment styles. Chapter three is aimed at summarizing the findings in this paper, summarizing the appropriate and most used interventions to support individuals with insecure attachment styles and traumatic childhood experiences and provide treatment recommendations for practitioners in the field and for parents who wish to understand more about the topic and break the intergenerational cycle of trauma and insecure attachments.

Chapter Two: Literature Review

Chapter one of this capstone project discussed the importance of attachment formation in the early years of life, provided studies showing its impact on people's lives and relationships until late adulthood, and discussed intergenerational trauma being passed on to children in families. It also showed how studies are limited in analyzing children's trauma and attachment difficulties in childhood and how they emerge in adulthood. Chapter two will offer a background analysis and context of theories discussed above, including polyvagal theory and a view on neuroscience, and explain in further detail attachment theory and trauma, summarizing the literature and highlighting its founders' main beliefs and ideas. It will also talk about how attachment styles and trauma affect emotional regulation in adult relationships. Lastly, it will discuss how intergenerational trauma is passed on in families, and its impact on a person's body and nervous system.

Background Analysis and Context

A study done by Assche et al. (2019) was trying to discover the association between reported childhood interpersonal trauma, attachment dimensions, and levels of anxiety and depression in late life. They discussed how 25% of elderly people show signs of depression and 10% to 20% of the elderly show signs of anxiety (Van Assche et al., 2019). The authors recruited the elders from senior centers by having the main researcher visit and provide them with information about the study. The study included 81 participants with an average age of 74.90, 36% of which were male, and 64% of which were female. Most participants were married (58%) while 27% were widowed, 9% were single, and 6% were divorced. The average number of children per participant is two, with an SD of 1.34, and the number of years of education is an average of 12.85, with an SD of 3.66. According to the Mini-Mental State Examination (MMSE) results all participants showed good cognitive functioning. The study used the Childhood Trauma Questionnaire Short Form (CTQ-SF) to assess adverse life

events that occurred in childhood. CTQ-SF is a 25-question short test divided into five subscales “emotional neglect, physical neglect, emotional abuse, physical abuse, sexual abuse” (p. 900). Later, the participants were put into two groups, with trauma, and without trauma. To test for negative life events in adulthood, they used the Psychiatric Epidemiology Research Interview (PERI), an interview that asks participants to self-assess their life divided into domains such as work, family, friends, and others. After that, on a Likert-like scale, they had to indicate how distressing each domain was. They measured attachment dimensions in adulthood using the Experiences in Close Relationships – Revised (ECR-R), a 36-item self-report questionnaire that uses a six-point likert-type scale. The participants were instructed to keep in mind one important relationship and attachment figure while answering the questionnaire to measure anxious attachment or avoidant attachment. To measure depression and anxiety, the authors used the Hospital Anxiety and Depression Scale (HADS-A) and the Geriatric Depression Scale (GDS). Lastly, to test for cognition, a standardized Dutch version of the Mini-Mental Status Examination (MMSE) was used to measure memory, concentration, functioning, and others. Almost half of the participants reported having had childhood trauma, mostly emotional (20%) and physical neglect (35%). In the negative life events, there was an average of eleven reported (SD=3.6), mostly relating to family distress, children, and health. Anxiety levels were an average of 4.41 with twenty individuals reporting elevated levels of anxiety. According to the HADS-A, scores of seven or higher show clinically significant anxiety. For depression, the average was 5.56, with nine individuals reporting clinically significant depressive symptoms. The GDS differentiates mild depression (scores between 11 and 13), from moderate depression (scores ranging from 14 to 20), and severe depression (scores>20)” (p. 901). Depression and anxiety were correlated ($r=.59$, $p < .01$) as the authors predicted due to previous research. The authors concluded that

childhood trauma can negatively affect the lives and well-being of older adults, specifically those with a high level of insecure attachments.

In 2016, Jansen et al. conducted a study to analyze the pervasiveness of childhood trauma and trauma types on mood disorders in young adults. The authors discussed significant evidence in the present literature showing that early traumatic events are linked to a higher risk of mental health disorders, including mood disorders (Jansen et al., 2016). Their focus on mood disorders stems from the lack of studies showing the association between mood disorders and family history in adult life. Trauma accompanies mood disorders and increases the chances of early onset, persistence, recurrence, suicide risk, and resistance to treatment (p. 282). In sum, early experiences of trauma in childhood are associated with mental health disorders in adulthood. The study used a cross-sectional method, analyzing the participants at a certain point in time without manipulating the study environment. Taking place in Brazil, the participants included 1560 young adults aged 18-24 and diagnosed with bipolar disorder and major depressive disorder (MDD). For assessment, they used the Childhood Trauma Questionnaire (CTQ), a self-rated tool that was presented in Portuguese for the participants. The participants, according to their scores, were divided into those that had gone through a traumatic event in childhood and those who had not gone through a traumatic event in childhood. Those with trauma were further divided into severe or moderate trauma. The results supported the authors' hypothesis that childhood trauma was a mediator between a family history of mood disorders and mood disorders in adulthood. With the exception of sexual abuse, the results showed that all traumas were linked to both MDD and bipolar disorder.

In a study to analyze distress tolerance (DT) in young adults that had gone through traumatic experiences in childhood, Berenz et al. (2017) hypothesized that childhood trauma was negatively correlated to DT in adulthood. Their main aim was to analyze the links

between traumatic experiences in childhood and adult perceived and behavioral DT (Berenz et al., 2017). There were 320 undergraduate students in the study, 75% of whom were women. All students were part of a university study aimed at studying the correlation between substance use and emotional health in college. To measure traumatic life events, different than the previous papers, the authors chose to use the Traumatic Life Events Questionnaire (TLEQ; Kubany et al., 2020; as cited in Berenz et al., 2017). The TLEQ is a self-report questionnaire that assesses if, when, and how many times a person experienced traumatic events of any kind. The authors also measured Post-Traumatic Stress Disorder (PTSD) with the PTSD Checklist for DSM-5 (PCL-5). It is a self-report with twenty items that measure PTSD symptoms of the individual's most traumatic experience. The study involved participants rating how much an event has bothered them in the past thirty days, with a Likert-type scale ranging from zero (not bothered) to four (extremely bothered). Both the TLEQ and the PCL-5 show good validity and reliability. Alcohol use consumption was assessed by asking how much alcohol was used in the previous thirty days before the study. To measure the participants' DT, DTS was used; a fifteen self-report Likert-type questionnaire that asked questions like "I can't handle feeling distressed or upset" (p. 799). To measure the physical aspects of DT, the tool BH Task was used, in which participants are asked to hold their breaths for as long as they can. The longer the participants could hold their breath, the greater their distress tolerance. Lastly, to measure psychological DT, the authors used PASAT, a behavioral index that measures DT with latency in completing the task. The results of the study showed that childhood physical abuse was positively correlated with perceived levels of DT in males and was inversely associated with alcohol use. Witnessing violence in the family during childhood was negatively correlated to behavioral and physical DT. As seen, the results were not as expected with greater levels of traumatic events in childhood being positively correlated to perceived DT. The authors explained these

results by suggesting that those who suffered traumatic experiences might have built emotional resilience.

In a longitudinal study done in Hawaii, Pfund et al. (2020) aimed at filling previous gaps in the literature and studied how different kinds of traumas affect the sense of purpose in adult life. Previous studies, according to the authors, were limited in assessing relationships with others and mostly focused on closeness to family members. There were 545 participants with an average age of 60.15, 53.6% were female and 46.6% were male. The authors measured for sense of purpose by using the Life Engagement Test, a Likert-type scale with six items including questions like “To me, the things I do are worthwhile” (p. 442). They measured for traumatic events using the Brief Betrayal Trauma Survey in which they answered close-ended questions about different trauma experienced during childhood and adolescence. Trauma was divided into low betrayal trauma, high betrayal trauma, and non-betrayal trauma. The results did not show any correlation between trauma in childhood and sense of purpose in adulthood, but they did show a difference between the cultural groups showing how early life events can affect people differently.

A study on attachment in adult life aimed at studying the stability of attachment styles from childhood until marriage was reported (Hasim et al., 2018). A quantitative survey was conducted among 400 Malaysian married participants, 50.3% of whom were male and 49.8% of whom were female. There was no control for marriage years or age in the study. The participants had to answer the Experiences in Close Relationships Inventory (ECR) to measure romantic attachment to their partners. Anxiety and avoidance in relationships were measured with a thirty-six-item point questionnaire. To sum up the results, there was conclusive evidence that attachment styles were stable and continuous from childhood into adulthood. Another study sought to analyze childhood neglect and maltreatment emerging in adult relationships and found that anger was significant in those who suffered maltreatment in

their early years, increasing the chances of in-partner violence and marijuana use (Faulkner, 2014).

On Attachment by John Bowlby

> Many of the most intense emotions arise during the formation, the maintenance, the disruption, and the renewal of attachment relationships. The formation of a bond is described as falling in love, maintaining a bond as loving someone, and losing a partner as grieving over someone. Similarly, the threat of loss arouses anxiety, and actual loss gives rise to sorrow; whilst each of these situations is likely to arouse anger. The unchallenged maintenance of a bond is experienced as a source of security, and the renewal of a bond as a source of joy. (Bowlby, 1977 p . 203)

Attachment theory became widely known in present days, originating from John Bowlby's three articles "The Nature of The Child's Tie to His Mother" (1958), "Grief and Mourning in Infancy and Early Childhood" (1960a), and "Separation Anxiety" (1960b). It was a theory that gathered many other theories in biology, etiology, and social sciences and insisted on viewing behavior with an evolutionary lens considering "neuropsychological, endocrine and receptor processes that interact with environmental stimuli to activate and terminate the activity of behavioral systems" (Ainsworth et al., 1978). Bowlby's theory also included Piaget's notion of the development of perception and cognition in a child's life. In 1958, Bowlby hypothesized that a twelve-month-old baby's attachment behavior is formed by different and independent responses that are based on instinct which develop at different phases of a child's life. Bowlby (1958) identified behaviors tied to attachment, those being sucking, clinging, following, smiling, and crying. The purpose of these behaviors is to form a bond between the mother and the child in a mutually beneficial relationship. During the child's development, they put their attention on a single mother and so an attachment is formed.

In his studies, Bowlby identified attachment styles in children: secure, disorganized, insecure-avoidant, and insecure ambivalent, and defined them as “a behavioral system that motivates infants to seek proximity to caregivers in times of distress, with the goal of security and survival” (Toof et al., 2020, p. 195). The attachment between child and their caregivers influences almost all dimensions of the child’s life until adulthood, shaping the individual’s relationship with others and with themselves (Friend, 2012). Bowlby’s research was a longitudinal study of children and their caregivers extending into their adult life and relationships. The relationships formed early in life shaped the child’s “internal working models of emotional communication” (p. 114), which builds the child’s beliefs on worth, love, and trust. The beliefs formed in childhood around love, trust, and worth are integrated into their adolescent and adult relationships and reflect their capacity to self-regulate, self-reflect, and relate to others socially. With the child’s attachment to their caregivers, the child learns whether it is safe to seek comfort and support from others or whether the child should rely on themselves.

The secure attachment style emerges from responsive parenting styles and the fulfillment of the child’s basic needs (Toof et al., 2020). Securely attached children show distress upon their caregiver’s absence but are immediately soothed upon their return. Insecurely attached children, on the other hand, have “frightening parenting experiences” in which their basic needs are not met (Toof et al., 2020, p. 195). Bowlby divided insecure attachment into two kinds: ambivalent and avoidant. Ambivalently attached children show more distress upon the caregiver’s absence than the securely attached. Upon their return, however, the children seemed to try to punish their caregivers for leaving them. Avoidant attachment, on the other hand, includes children showing little distress upon the caregiver’s absence and ignoring them upon their return. With rapidly growing studies on the topic of attachment, Bowlby’s attachment theory continues to evolve until the present day. During

childhood, the primary caregivers are the child's primary attachment figures. As the child grows older, in adolescence and adulthood, the attachment figure can expand into being other relationship partners and friends (Shaver & Mikulincer, 2009; as cited in Toof et al., 2020). The attachment styles of adults include their childhood attachment styles but integrate them with adult relational patterns. These shift into: anxious attachment, avoidant attachment, and secure attachment. Anxiously attachment adults want to be close to others and feel protected by others but are constantly worried about their worth to their partner. Avoidant adults do not feel comfortable with closeness and prefer to be emotionally distant. Lastly, secure adults have positive beliefs about themselves and are comfortable with depending upon and being independent (Toof et al., 2020, p. 196).

Taking a biological view, a human's first years of life rely on environmental cues and are critical for the formation of the brain and the organization of neural systems (Friend, 2020). For a secure attachment to be formed in childhood, the caregiver should be attuned to the physical and emotional needs of the child. By doing that and interacting with the child, they learn how to regulate emotions, play, and interact with the world, which in turn creates "neural connections and shape circuitry in the limbic system" (p. 115). The neural creation formation plays an important role in the child's future social interactions, and ability to regulate the body and emotions. Therefore, adults with insecure-anxious attachments have difficulty self-regulating and forming healthy bonds with others.

Attachment Theory by Mary Ainsworth

Generally known as the co-founder of attachment theory, Mary Ainsworth had considerable contribution to the theory, offering empirical evidence from her research in Uganda and Baltimore and designing the Strange Situation Procedure (SSP), a test to assess and categorize a child's attachment connection to their caregiver (van Rosmalen et al., 2016). Ainsworth was initially drawn to William Blatz's work on security theory (1966) and worked

with him as a mentor and colleague in the early years of her career. In an interview with Roger Myers (1969), Ainsworth said “When I think of the course of my career, I can see a common thread the whole way through the course that is Blatz […]”. Ainsworth agreed with Blatz’s idea that, for an individual to experience security in a situation, the individual has to be confident that they can overcome it either alone or with someone, and that someone else or something will prevent the individual from suffering (Ainsworth, 1988). Following Blatz’s way of thinking, a person feels security when they can rely on something or someone other than themselves. After her work with Blatz, Ainsworth started working for Bowlby using more direct observations (Myers, 1969). Similar to Bowlby, Ainsworth (1989) believed that a child’s early relationship and attachment formation will continue to influence their adolescent and adult life. A few decades later, Ainsworth traveled to the African continent and began her independent work (van Rosmalen et al., 2016).

Ainsworth’s most known contribution to the attachment theory was the SSP, “a laboratory procedure made to measure and classify a child’s attachment to his or her caregiver” (Ainsworth, Blehar, Waters, & Wall, 1978; as cited in van Rosmalenet al., 2016; p. 33). While designing this procedure, Ainsworth kept in mind the notion that only a securely attached child that uses their attachment figure as a secure base would, in an unknown environment, engage in the independent exploration of it (van Rosmalen et al., 2016). The SSP can be divided into eight steps: a child and their attachment figure go to a strange environment to the child. After arriving at the said environment, a stranger enters the place, and the attachment figure leaves and then returns. After the return of the attachment figure, the stranger then leaves and is followed by the attachment figure leaving again, leaving the child alone. The last steps include the stranger returning before the attachment figure but followed by them shortly after. The SSP focuses on the child’s behavior during the

reunion and the child's exploratory behavior, if any. This procedure is similar to Bowlby's research, however, including a stranger coming into the room.

Ainsworth's research showed that 25% of children felt relief after reuniting with the caregiver alongside minor signs of "indifference", and 15% were interested in being close to the caregiver but did not show much sense of relief in the reunion (Ainsworth et al., 1978). This research resulted in the division of attachment theory into secure and insecure with three sub-categories: secure attachment, anxious-ambivalent, and anxious-avoidant. For Ainsworth, secure attachment is achieved by the constant, present, and stable responsiveness of an attachment figure. A secure child's caregiver plays more and shows more love and care. These securely attached children will show a greater sense of trust, and greater self-esteem, and have longer-lasting relationships in adulthood. Ainsworth also contributed with the notion of "maternal sensitivity", which she described as "being sensitive to the signals of a child as timing one's "caretaking interventions in synchrony with the individual child's needs and rhythms" (Ainsworth, 1967, p. 394). She pointed to Bowlby's notion of maternal warmth being enough that one should not confuse it with maternal sensitivity and that warmth symbolizes a characteristic while the latter is "an appropriate response to the child's initiative" (Ainsworth & Marvin, 1995; Mesman & Emmen, 2013; as cited in van Rosmalen, et al., 2016; p. 34). She believed that not only does a child need the presence of an attachment figure at all times to form a secure attachment, but also a sensitive attachment figure adapting to the child's developing needs and seeing things from the child's point-of-view. Anxious-ambivalent attachment can be seen through the child's extreme uncertainty about a stranger, experiencing distress when the caregiver is not present, and not being comforted when the caregiver returns. Lastly, avoidant attachment can be seen when children do not actively seek comfort from others and do not show a preference between their caregiver or a stranger.

Secure Attachment

In order to form a secure attachment to an attachment figure, one must first accomplish proximity maintenance with the attachment figure. Secondly, the attachment figure should be able to give physical and emotional comfort and lastly, create a safe place in which one can tend to one's distress. If all these are met, that person becomes a source of security (Mikulincer et al., 2003).

A caregiver's role in taking care of a child impacts many aspects of that child's life. According to Sroufe et al. (2000), secure attachment has been associated with a child's self-esteem, confidence, social competence, and resilience. If a caregiver is able to create a nurturing environment with safety and security, the child will be able to explore their environment which in turn will help them gain feelings of belonging and connection to others (Pastorelli et al., 2016). A securely attached child can engage in self-soothing actions that decrease their emotional distress (Braungart et al., 2001). The SSP is a test that engages the attachment system, forcing the child to be in a strange environment with strangers away from their caregiver. During the SSP, a securely attached child will show an appropriate amount of emotion and will regulate from the distress of being alone, while insecurely attached children will either overregulate if they are the avoidant type or under-regulate if they are the resistant or anxious type.

Bowlby also hypothesized that a secure attachment style and security are stable during a lifespan but can also change depending on new attachment-related experiences (Waters et al., 2000). Water's study assessed the stability of attachment patterns from childhood to early adulthood and found that early secure attachment with a caregiver, in this study specifically a mother, was significantly related to having a secure attachment style after 20 years. It was also seen that a strong base of social support can help decrease negative experiences and increase the stability of a secure attachment. Other research shows that a

securely attached adult will have healthy functioning and psychological adjustment in early adulthood (Mikulincer & Shaver, 2007; as cited in Homan, 2016). In later adulthood, secure attachment shows better "social integration, life satisfaction, and physical health, less depressive symptoms, more marital satisfaction, fewer beliefs on age stereotypes, and a smaller decline in health after retirement" (Bamberger, & Bacharach, 2013; as cited in Homan, 2016; p. 3; Bodnar & Cohen-Fridel, 2010; Gillath et al., 2011; Monin, Zhou, & Kershaw, 2014; Segel-Karpas, Wensauer & Grossmann, 1995).

Insecure Attachment

Abuse, neglect, and dysfunction are common definers of insecure attachments and have detrimental effects on physical health, mental health, and social behavior, which can last a lifespan (Felitti et al., 1998; Hesse &Main, 2000; Steele et al., 2016). Patterns shown in insecure attachments are also linked to emotional dysregulation, low self-worth, unhelpful coping mechanisms, poor social abilities, and limited self-awareness (Wei et al., 2008). Typically, a child with an insecure attachment style cannot count on the caregivers for reliable emotional support and safety, leaving the child with lower levels of coping competence, feeling stressed and anxious, and having to fend for themselves from an early age (Bus, 1996). As mentioned previously, in the early works of Bowlby (1960), insecure attachment can be separated into two categories: avoidant, and ambivalent (or resistant). The insecure attachment also has a third subdivision, disorganized attachment, which was added later on by Main and Solomon (1990). Ambivalently attached children show more distress upon the caregiver's absence than the securely attached. Upon their return, however, the children seemed to try to punish their caregivers for leaving them. While avoidant-attached children showed little distress upon the caregiver's absence and ignored them upon their return.

Bowlby identified four patterns of relating in insecure attachment, those being "compulsive care seeking, compulsive caregiving, compulsive self-reliance and generalized anger toward attachment figure" (Bowlby, 1977; West et al., 1994). An anxious attachment style would show either compulsive caregiving (CCG) toward the attachment figure or compulsive care-seeking (CCS). CCG can be described as putting the attachment figure's needs above their own, while CCS can be described as depending on the attachment figure and being helpless without their help (West et al., 1994, p. 7). On the other hand, a child that learns their caregiver is not reliable or available, can become self-sufficient and show compulsive self-reliance (CSR) or generalized anger (GA) towards the caregiver. CSR is described as pulling back from the attachment figure and not depending on them, while GA shows anger towards the attachment figure and frustration also when they are not around (p. 6-7). In later years, these patterns can still be seen in relationships with others, ranging from closeness and dependence to detachment and distance. In 1994, West's research results showed that these patterns offered a "clinically useful system for characterizing difficulties with interpersonal relationships in dependent and schizoid personality disorders, with specific patterns relating to each disorder" (West et al., 1994, p. 4).

Disorganized Attachment

Disorganized attachment, also called D classification, was introduced by Main and Solomon (1990) and included a person without a clear attachment behavior. The way in which insecure-disorganized children respond when their attachment system is activated includes a mix of different behaviors like resisting, avoiding, and showing anxiety (Cherry, 2022; Main & Solomon, 1990). The hypothesis around how this occurs is when the caregiver shows chaotic, frightening, or dissociative behaviors towards the child, leaving the child to protect themselves alone rather than to find safety in the caregiver (Bahm et al., 2016; Heller, 2017; Main & Hesse, 1990). Having a disorganized attachment style, however, does not

entail having been maltreated and cannot be screened for such (Granqvist et al., 2017). In the SSP, children who were maltreated did not categorize as disorganized, and some children who were not maltreated were categorized as having a disorganized attachment style. In doing interviews with children with disorganized attachment styles, it was observed that the mothers see themselves as helpless and out of control and are emotionally dependent on the child (Solomon & George, 2011). Based on their observations, there were seven indices of behavior that were distinct for disorganized attachment style. Those include "simultaneous display of contradictory behavior; undirected, misdirected, or incomplete movements; stereotypies, mistimed movements, and anomalous postures; freezing or stilling; display of apprehension of the caregiver; overt signs of disorientation or disorganization" (Duschinsky & Solomon, 2017, p. 526). In studies of the D classification, results have shown that it is predictive of mental health problems in the future, showing a higher risk for externalizing disorders (Fearon et al., 2010; as cited in Duschinsky & Solomon, 2017).

Internal Working Model

An infant's first attachment to a caregiver shapes their internal working model (IWM), an understanding of the self, others, and the world around them which determines their future relationships until late adulthood, how they relate to others, and themselves (Ainsworth, 1989; Bowlby, 1973). The attachment system monitors events, checking for danger or stress and the availability of an attachment figure to seek out safety (Bowlby, 1980; as cited in Zimmerman, 1999). A securely attached child whose attachment system encountered threat will seek out their attachment figure, while an insecurely attached child will have avoidant or resistant behaviors activated. This will not be solely based on the reaction of the child but is based on the previous experiences the child has had with their caregiver.

Bowlby's theory (1973) argued that the IWM, whether positive (secure) or negative (insecure), will in turn affect positively or negatively one's social patterns and behaviors. The

IWM impacts the individuals' ability to deal with stress, with regulating emotions, and socialize. Longitudinal studies have shown that the patterns and environment a child grows up in can be repeated in adult attachments with peers and romantic partners, as well as the way one relates to the world, their emotional regulation capabilities, and their self-reflection (Hesse & Main, 2006; Sroufe, 2005;). Children, at approximately seven months of age, will have a stable IWM and will know what to expect from their caregivers in terms of emotional response to their needs (Ainsworth et al., 1978; Bowlby, 1969; Braungart et al., 2001). The expectations, whether positive or negative, will shape these children's relationship patterns and socialization skills in the future. Negative experiences in the formation of the IWM have been shown to develop into challenges in marriage, bonding with their future children, and even personality confusion (Bowlby, 1977).

Social Information Processing

Humans, in their lifetime, have different ways of processing information in the world and their social environment. The processing of social information is an important aspect of an individual's development, affecting their relationships and emotions (Bowlby, 1973; Dodge & Petit, 2003; Dykas & Cassidy, 2011; Fletcher et al., 2006). The ways in which one perceives and interprets another's actions are typically related to mental internalizations of previous experiences. IWMs come to play in social information processing and help individuals interpret them, leading to either adaptive or maladaptive patterns (Bowlby, 1973). In 1980, Bowlby, drawing from other researchers' work, developed the notion of "an information processing approach to the defense" (p. 44). He explained that when one has a social experience that activates the attachment system that previously led to a negative experience, one's IWM will defend itself from this information (p. 73). Therefore, it can be understood that the activation of the attachment system that led the child to seek out a caregiver who rejected them in turn activates the IWM's defense mechanism that serves to

protect the child from re-experiencing that distress again (Bowlby, 1980). Blocking out social information that is painful is an important notion in the attachment theory (Bowlby, 1980; Franley et al., 2000; Mikulincer et al., 2009).

Attachment and Emotional Regulation

Those with a secure attachment style are found to be able to regulate emotions better, have better social cognitions, and have better behavior (Pallini et al., 2018). Pallini (2018) found that children, until age eighteen, that was securely attached were able to show higher effortful control (EC) than those who were avoidant or resistant-attached. Proximity seeking, for Bowlby (1988), is an affect regulation strategy that an infant is born with and uses to protect themselves from threats and to soothe themselves from distress. Secure attachment comes from the successful completion of these affect-regulation strategies. When those occur, the infant can see the world as a safe place (Mikulincer et al., 2003). This proximity-seeking behavior was developed throughout evolution because it increased the likelihood of survival of infants who are not yet apt to feed themselves, protect themselves from harm, and move around the world.

Shaver and Mikulincer (2002) came up with a model "of activation and dynamics of the attachment system", integrating findings from studies of people such as Bowlby (1973, 1969), Ainsworth (1991), and Fraley and Shaver (2000). Three main components are seen in their model, the first is responsible for the main attachment strategy of proximity seeking and includes monitoring good and bad events. The second one is "monitoring and appraisal of the availability of external or internalized attachment figures; it is responsible for individual differences in the sense of attachment security and the development of what we call security-based strategies" (Mikulincer et al., 2003, p. 4). The third one is the monitoring of the "viability of proximity seeking as a means of coping with attachment insecurity and distress" (p. 4). Monitoring such events leads to the activation of the attachment system when one is in

distress and faced with a threat. If the attachment figure is not available or not responsive, the individual checks to see if proximity-seeking is viable or not. If proximity seeking is viable, the individual will opt for hyperactivating strategies such as hypervigilance towards threats, which can be associated with anxious attachment. If it is not viable, the individual will opt for deactivating strategies, such as detachment from the attachment figure, as seen in avoidant/ambivalent attachment styles (Mikulincer et al., 2003).

In two studies conducted in 2001, participants underwent a self-report to identify their attachment style and later participated in a test to assess the regulation of negative affect and their responses to the affect (Pereg, 2001). The studies hypothesized that attachment-related strategies would help in "the regulation of negative affect and shape the pattern of cognitive responses to this affect […] these cognitive responses would be molded in line with the main goals of each attachment-related strategy" (p. 11). The first study involved being presented with random positive and negative headlines to read and then to recall them. The second involved listing hypothetical events that are considered negative in a relationship. Pereg predicted that those participants that were rated highly on insecure avoidance would not differ a lot when they were exposed to negative headlines or neutral headlines. Of those participants with low scores on insecure avoidance and insecure anxious attachment styles, the expectation was that they would show less memory of the negative headlines contrary to those that scored high on insecure avoidance and anxiety, who would show a congruent mood of patterns of cognition and remember more of the negative affect following both negative and neutral affect (Pereg, 2001; Mikulincer et al., 2003). The results showed in line with the predictions and hypothesis, showing that one's attachment style moderates the connection between negative affect and cognition.

During COVID-19, an incredibly stressful situation in the entire globe, Liang (2021) did a study that assessed the negative emotions of parents and their children during the

pandemic. Caregivers have differing abilities, depending on their attachment styles, to deal with their own emotions and their children's emotions. Attachment styles not only affect the individual throughout their lifespan but also affect their offspring's lives and shape their attachments in a constant generational cycle. Securely attached parents are found to offer more emotional stability and guidance to their children, showing more consistency in behaviors and allowing for a safe and compassionate way for the child to grow and have their own experiences in life (Liang, 2021). In contrast, insecurely-attached parents are less helpful in regulating their child's emotions, they often show a limited capacity to deal with emotions and show feelings that influence their children negatively. As a result, the child will learn those unhealthy emotional regulation techniques to be able to relate more to their parents. Other studies have shown how such interactions with parents can influence the child's prefrontal cortex which affects their self-awareness, emotional expression, and thinking (Siegel & Hartzell, 2018).

Parent-Child Relationship & How Parent's Attachment Impacts Their Children

As discussed briefly in the section above, caregivers' attachment styles affect their children in a few ways. Maltreatment in childhood has been shown to be commonly passed onto generations, in an intergenerational transmission of insecure attachment patterns (Fonagy et al., 1993). Results from various research have shown that responsive parenting is linked to secure attachment (Ainsworth et al., 1978; De Wolff & van IJzendoorn, 1997; Prunas et al., 2019). It was shown in a study by de Wolff and van IJzendoorn (1997) that specifically mothers of children with secure attachments are consistent, sensitive, and more reliable than mothers of children with insecure attachments (Braungart-Rieker et al., 2001). A link was also found in father and child attachment styles; however, the sensitivity was weaker than in mother-child attachments. A secure relationship between a mother and child has been linked to greater emotional regulation and suggests that emotional regulation "may serve as

one of the mechanisms through which attachment security affects some of these later socioemotional outcomes" (p. 1). Another study aimed at analyzing the positive behavioral synchrony between parent and child showed that it was positively correlated with their self-regulation, with parent gender as an important moderator (Davis et al., 2017). Sensitivity in relationships between parent and child can be difficult for some parents and takes the skill of being sensitively attuned, loving, compassionate, and attentive. This sensitivity can help children articulate and regulate their emotions (Bocknek et al., 2009). The parent helps the child communicate their needs better and helps them regulate intense emotions which leads to reduced stress levels.

In 1978, Tronick et al. designed The Still-Face Paradigm, a test in which parents are face-to-face with their children and change their interaction with them, going from their normal to withdrawal with a "still face". The test has helped in understanding infants' emotional experiences (Braungart-Rieker et al., 2001). Research has shown that infants at three months of age show great distress to the still-face test, more than brief separation from the caregiver. This suggests that the infant has an expectation of the caregiver's behavior and interaction with them and such change in what they are used to cause them greater distress in trying to regulate their negative emotions (Field, 1994; as cited in Braungart–Rieker et al., 2001).

Caregivers that have a secure attachment with their caregivers respond with more sensitivity to their children's needs, perceive them accurately, and behave in a more compassionate manner (Fenney et al., 2016; Prunas et al., 2019). On the other hand, if a parent's attachment style to their parents is insecure, they have been observed to be inadequate in the way they respond to their own child's needs. Defense mechanisms are important to attachment theory and the assessment of adult attachment styles because they are essential to mental and interpersonal functioning (Bowlby, 1980; Prunas et al., 2019).

Defense mechanisms are formed when a caregiver is unable to respond well to a child in distress, consequently activating the attachment system.

Good Enough Parent

The concept of a "good enough mother" was introduced by Winnicott in his book Playing and Reality (1971). For Winnicott, a "good enough mother" or main caregiver adapts to the needs of the infant. The caregiver is, at first, devoted to the infant and their needs, sacrificing their own to fulfill the others' (Wedge, 2016). However, over time, the caregiver will let the infant experience some frustration and distress, being present to help them soothe but not rushing right away to soothe them like in their first years of life. The infant at an early age of life experiences the mother as part of themselves. With time, the infant will learn that they have their own mental activity and sense of their own external world (Winnicott, 1971). Therefore, a sense of healthy external world formation is dependent on the mother or other caregiver, and the few times they let the infant experience frustration without rushing to soothe them. Without a natural and gradual decrease of the caregiver's full attention, the baby might not develop a sense of the real external world and might grow up believing that their needs will be met immediately by others. According to Winnicott, this is an illusion that, although necessary in the initial years of life, must have a natural and gradual decrease. To summarize, a good enough caregiver will balance the vital process of adapting to the infant's needs and the equally important process of gradually decreasing immediate responsiveness to their needs.

Attachment in Adulthood

During the adult years, a person will form romantic relationships, professional relationships, friendships, and a connection with family members. Some theorists claim that the styles of attachment remain the same as in childhood (Feeney, 2002). An adult's attachment style is measured differently than a child's. However, two styles remain in

agreement with researchers, those are ambivalent and avoidant. Similar to a child's avoidant style, an adult's avoidant attachment style will show up as discomfort with intimacy and close relationships, maintenance of independence and isolation, and often shutting down emotionally; while an anxiously attached adult will show significant stress and insecurity in their close relationships, and fear of being rejected or abandoned (Green et al., 2007). As infants constantly look out for their caregiver's responsiveness and availability to their needs with their worthiness for love and support (Bowbly, 1980); adults will also have these attachment beliefs and representations over time, even into late adulthood (Elliot & Reis, 2003). Although attachment styles can vary over time, little is known about how and why they do so (Fraley, 2019). The experience of becoming a parent oneself, experiencing life traumatic events, relationship conflicts, risk factors, and therapy are all possible reasons why attachment styles can shift and change.

Romantic Attachment

"Romantic love is conceptualized as an attachment process that shows the continuity of infant-parent attachment" (Hazan & Shaver, 1987, p. 511). In categorizing adult romantic attachment styles, researchers have offered four different styles: secure, dismissive, preoccupied, and fearful (Bartholomew, 1990; Bartholomew & Horowitz, 1991). Other research soon emerged following the four categories of adult romantic attachment. In 1998, Brennan et al. designed a scale that shows how each category stands. A secure attachment style scores low on anxiety and avoidance, a preoccupied style scores high on anxiety but low on avoidance, a dismissive style scores low on anxiety and high on avoidance, and lastly, fearful style scores high on anxiety and avoidance. Adults with a secure romantic attachment style can have better and more direct communication as compared to those with insecure styles. This can be explained by the confidence the secure individuals have that their partners will be there for support due to having had that secure attachment experience as a child with

their caregivers (Johnson, 2006; Kobak & Sceery, 1988; Yárnoz-Yaben, 2010). The individual with the preoccupied style, who is high in anxiety, is more likely to be clingy, make demands, and also withdraw from their partners, showing a high level of dependence on the other accompanied by preoccupation (Johnson, 2006). On the other hand, dismissive-styled individuals have a high level of avoidance and wish to stay independent from their partners, believing that the more independent they are, the more self-worthy they will be (Bartholomew, 1990). Lastly, a person with a fearful style, one that is high in both anxiety and avoidance, will tend to limit intimate relationships and deactivate attachment systems in order not to be rejected and not to suffer (Guerrero et al., 2021).

Another research proposed theories of attachment in childhood being reflective of adult romantic attachments (Chen et al., 2000). The first theory states that if a child encounters anxiety with their caregiver in their childhood, they will directly encounter anxiety in their romantic relationships in adulthood. The second theory suggests that if a child encounters avoidance with their caregiver in childhood, they will also encounter avoidance in their adult romantic relationships. They also suggest that anxiety and avoidance with peers in childhood can also lead to anxiety and avoidance in future romantic relationships (Chen et al., 2000). Friendships are viewed as the same as relationships with caregivers, therefore the generalization to peers is understandable (Furman & Wehner, 1995; as cited by Hasim et al., 2018).

On Trauma

Experiencing traumatic events during childhood can greatly affect one's life emotionally, psychologically, and physiologically (Banker et al., 2019). These impacts may not show in childhood but may appear later on in life as PTSD, depression, and anxiety, among other mental health disorders. Trauma can hinder the individual's ability to be vulnerable, communicate, to self-regulate, and build healthy relationships. Trauma impacts a

person's physiological well-being as well. Those who have faced trauma in childhood have a higher risk of disease, including endocrine disorders, hormonal functioning, and chronic fatigue (p. 301). Trauma can be divided into three parts: physical, emotional, and sexual (Toof et al., 2020), two of which can be seen while emotional trauma can sometimes go unnoticed. Physical trauma can include illnesses, accidents, assault, abuse, war, and violence. Emotional trauma can include psychological abuse, witnessing violence, neglect of basic needs, grief and loss, breakups, and immigration, among many others. Lastly, sexual trauma can include sexual abuse, assault, harassment, and exploitation.

On Trauma and Attachment

In the early ages of life, trauma can severely impact attachment formation with a primary caregiver. The child's first attachments act as a 'configuration' for later attachments in adolescence and adulthood, shaping them and unconsciously creating a cycle (Banker et al., 2019). Those who have experienced traumas in relationships can generalize the experience to other relationships, leading to difficulties in the formation of a secure attachment. Biologically, early interactions with caregivers shape the child's brain. If the early interactions are traumatic, the brain will have difficulties in forming the areas that regulate emotions, stress, and coping mechanisms (Friend, 2012). Friend also found that severe traumatic events at an early age can cause neurons that link the limbic system to die and cause the orbitofrontal cortex to fail in self-regulation. With that consequence, the individual is always in a state of hyperarousal, robbing the child of their childhood and hindering development.

Individuals that have had difficulties in forming attachments in the early stages of life are more susceptible to PTSD later on in life (Buczynski & van der Kolk, 2022). According to Buczynski and van der Kolk, caregivers are the ones that train a child's nervous system while growing up. Literature shows that a person with a disorganized attachment style did not

have caregivers that offered physiological safety and comfort (Buczynski & van der Kolk, 2022; Hesse & Main, 2006; Sroufe, 2000).

On Neuroscience

Attachment Theory has gained neuroscientific legitimacy from its features that are dependent on the neurophysiological mechanisms described in the Polyvagal Theory (Porges, 2011; Schore 2003; Siegel, 1999). In bridging polyvagal theory and attachment theory together, one is able to shift the perspective of attachment theory towards a biobehavioral theory with scientific clinical applications that is able to offer an effective guide towards treatment that will be discussed in chapter three of this paper. The Polyvagal Theory was developed by Dr. Stephen Porges in 1969. It gives a physiological understanding of the nervous system, mobilization, disconnection, and social engagement in human beings, helping people understand the Autonomic Nervous System (ANS) actions that are on an unconscious level (Dana & Porges, 2018). The theory has three main principles: the first principle is that of hierarchy, based on evolution, and causes the body to respond from three pathways: the dorsal vagal, sympathetic nervous system, and ventral vagal (p. 15). The second concept is that of "neuroception", a term coined by Porges to symbolize the unconscious ways our ANS responds to stimuli, like cues of safety, danger, and social engagement. Lastly, co-regulation, which is the reciprocal regulation coming from social engagement, that allows one to feel safe and build trusting relationships. The ANS has sympathetic and parasympathetic branches. The sympathetic is responsible for the "fight or flight" system, releasing adrenaline into the body when it is threatened and preparing it for action (p. 20). The Polyvagal theory recognizes the vagus nerve in the parasympathetic branch, a nerve that travels from the brain to the stomach and backs up into the eyes and ears (p. 20). The vagus nerve is divided into two pathways: the dorsal vagal and the ventral vagal. The dorsal vagal takes over when the body is in danger, creating numbness, dissociation, and

a protective state of freezing. The ventral vagal, on the other hand, takes over when there is a sense of safety, co-regulation, and connection to another. When the ventral vagal, parasympathetic nervous system, and dorsal vagal are working well together, one experiences well-being.

The connection between attachment theory and the nervous system can be made by noticing how one becomes regulated when an attachment figure attunes to one's physical and emotional state of arousal (Sroufe, 2000; Stern, 1985). In switching the view of attachment theory from a purely psychological one to a biological-behavioral one, we can notice more clearly that the theory is dependent on mechanisms of neurophysiology described in the polyvagal theory (Flores & Porges, 2017). The polyvagal theory also helps explain social behaviors that are learned in childhood and are continuingly expressed throughout the lifespan until adulthood. Keeping in mind the mechanisms described in the polyvagal theory, secure attachment can be described as having more capacity for emotional regulation, resilience, and neuroception. Without consciously evaluating for risk in the environment, an individual can be more resilient via the vagal nerve and be able to regulate negative affect physiologically and behaviourally. Neuroception cannot be learned but was developed through evolution (Flores & Porges, 2017).

When a caregiver interacts with an infant, a neuronal connection is created, and circuitry is shaped within the infant's limbic system (Siegel, 1999). The right limbic area of the brain is "responsible for processing social interactions, regulating bodily and affective states, and coping with stress" (Schore, 2001a). During the first two years of life, the right hemisphere of the brain will undergo a growth spurt, and during this growth spurt, it is vital to have a secure attachment for their ideal maturation. If traumatic experiences occur during the early years of life and attachment, the infant's developing brain will be hindered and there is evidence to show that numerous neurons die in the limbic circuits that link the subcortical

and cortical areas together (Friend, 2012; Perry et al., 1995). The dying of those neurons will negatively affect the orbitofrontal cortex, making it unable to regulate emotional states and stress response, making the individual switch between hyperarousal and dissociation and affecting biochemicals that in turn kills neurons in the hippocampus, responsible for memories (Schore, 2001b). According to Siegel (1999), a damaged hippocampus will not be able to process traumatic memories, causing them to remain unconscious in the body and limbic system, causing more stress reactions. If a considerably large number of neurons connecting the right hemisphere to the left hemisphere are killed, the brain will not be able to process emotions semantically and the individual will not be able to express their feelings in words, a disability called alexithymia (Cozolino, 2002). Traumatic experiences with the attachment system are now known as developmental trauma (van der Kolk, 2005). Symptoms of developmental trauma are usually a reflection of poor IWM, social information processing, emotional processing, and cognitive functioning (Lyons-Ruth & Jacobvitz, 1999; as cited by Friend, 2012).

Chapter Three: Summary, Recommendations, and Conclusion

As seen in Chapter two of this capstone project, insecure attachment in childhood can remain stable until adulthood and can be accompanied by negative consequences, such as PTSD (Buczynski & van der Kolk, 2022), depression (Toof et al., 2020; Van Assche et al., 2019), lower levels of distress tolerance (Berenz et al., 2017), anxiety (Rosmalen, et al., 2016), difficulty in forming healthy relationships (Bowlby, 1983; Friend, 2020), and difficulty in processing social information (Bowlby, 1980; Franley et al., 2000; Mikulincer et al., 2009). This paper reviewed attachment theory since its origins and talked about the present literature review on how trauma and attachment styles can emerge in adulthood and their consequences in a person's life.

Chapter three will be focused on summarizing the appropriate and most used interventions to support individuals with insecure attachment styles and traumatic childhood experiences and provide treatment recommendations for practitioners in the field and for parents who wish to break the intergenerational cycle of trauma and insecure attachments.

Restating the Purpose Statement

Considering the limited studies showing the link between early childhood trauma and mental health issues, such as depression, anxiety, post-traumatic stress disorder, and substance-use disorder, in late adulthood; this Capstone project sought to analyze traumas faced during childhood, difficulties and barriers in forming healthy/secure attachments, and possible ways in which these can affect and emerge in adult life - ranging from early adulthood into late adulthood. This paper also sought to analyze how traumas and insecure attachments formed during childhood can be passed onto that individual's future offspring, in an intergenerational cycle. The central question this project answered is "How do early childhood trauma and attachment formation difficulties impact/emerge in adulthood?".

Summary of Findings

The literature reviews and findings were discussed in chapter two of this paper. To summarize, findings showed that childhood trauma can negatively affect the lives and well-being of older adults, specifically those with a high level of insecure attachments (van Assche et al., 2019). Findings also showed significant evidence that early traumatic events are linked to a higher risk of mental health disorders, including mood disorders (Jansen et al., 2016). In sum, early experiences of trauma in childhood are associated with mental health disorders in adulthood. Friend (2012) also found that severe traumatic events at an early age can cause neurons that link the limbic system to die and cause the orbitofrontal cortex to fail in self-regulation. With that consequence, the individual is always in a state of hyperarousal, robbing the child of their childhood and hindering development.

Secure attachment has been associated with a child's self-esteem, confidence, social competence, and resilience. If a caregiver is able to create a nurturing environment with safety and security, the child will be able to explore their environment which in turn will help them gain feelings of belonging and connection to others (Pastorelli et al., 2016; Sroufe et al., 2000). A securely attached child can engage in self-soothing actions that decrease their emotional distress (Braungart et al., 2001). Other research shows that a securely attached adult will have healthy functioning and psychological adjustment in early adulthood (Mikulincer & Shaver, 2007; as cited in Homan, 2016). Research also shows that secure attachment has psychological benefits throughout a lifespan. In later adulthood, secure attachment shows better "social integration, life satisfaction, and physical health, less depressive symptoms, more marital satisfaction, fewer beliefs on age stereotypes, and a smaller decline in health after retirement" (Bamberger, & Bacharach, 2013; as cited in Homan, 2016; p. 3; Bodnar & Cohen-Fridel, 2010; Gillath et al., 2011; Monin, Zhou, & Kershaw, 2014; Segel-Karpas, Wensauer & Grossmann, 1995). Patterns shown in insecure

attachments are also linked to emotional dysregulation, low self-worth, unhelpful coping mechanisms, poor social abilities, and limited self-awareness (Wei et al., 2008). In disorganized attachment, findings showed that it is predictive of mental health problems in the future, showing a higher risk for externalizing disorders (Fearon et al., 2010; as cited in Duschinsky & Solomon, 2017).

Treatment Recommendations & Clinical Interventions

The purpose of this section is to aid therapists, families, and couples that are dealing with the consequences of insecure attachment and trauma by providing them with findings on treatment recommendations. Since the previous chapter discussed in length what these consequences are in an individual's lifespan, this third chapter will provide treatment recommendations for practitioners from different theories, such as Polyvagal Theory, Somatic Experiencing (SE), and Group Based Attachment Intervention (GABI). At the end of this paper, readers should be able to:

- Have knowledge and understanding of the consequences of early trauma and insecure attachment;
- Learn how trauma and attachment styles can impact relationships;
- Have a basic understanding of treatments from three different theories;
- Become aware of attachment style and their consequences on their own relationships.

Group Psychotherapy & The Polyvagal Lens

This section, following mostly the work of Flores and Porges (2017), is aimed at offering practitioners information about a group treatment accommodating to the principles of the polyvagal theory with the result of improving social communication, neuroception, and affect regulation.

To have positive results in group therapy and improve cues of safety that are lacking in people with insecure attachment styles and people with traumatic histories, three polyvagal

processes should be kept in mind: neuroception, social engagement, and vagal brake. The practitioner facilitating the group therapy should also be aware of three principles of the theory:

1. Be aware of social and environmental cues that affect neuroception and how neuroception can impact one's ability to differentiate between safety and threat.
2. Ensure that the environment of the group promotes a safe space to decrease defensiveness and exercise the social engagement system of the members
3. Offer a space for exercising the vagal break in which each participant will have the opportunity to navigate between states of "calm, to vigilant, to startle[d], and back to calm" (Flores & Porges, 2017; p. 211).

If these three principles are ensured by the group therapist, the outcomes can be expected to emerge naturally in the group as "1) improvement in both explicit and implicit affect regulation; 2) enhancement of affect recognition and refining emotional literacy; 3) correction of faulty neuroception, and 4) expansion of relational capacities by increasing acuity in reading social cues and non-verbal implicit communication" (p. 211). If the environment is deemed safe through neuroception, social engagement is enabled, and unnecessary fight/flight/freeze responses are inhibited. Engaging one's social engagement system with another's social engagement system is of extreme importance to psychotherapy and is where safe exploration, emotional regulation, change, and healthy relationships occur.

An important factor of group therapy is creating a safe space for members of the group so that they can establish a lasting secure attachment between each other and create better IWM of relationships. In sharing difficult experiences, vulnerability, and maintaining emotional contact, the group can build a trusting relationship together (Black, 2019). The group therapist also allows the members to be playful with each other and to explore differences between each other, providing selflessness and shared consideration, which helps

in the activation of the vagal brake, transitioning from an aroused state to a calm state (Flores & Porges, 2017). For example, Kim, a group member, is asked what is wrong in the group therapy after seeming quiet and distracted for a while. Kim, after being encouraged to speak finally shares that she has been taken out of a group project in her job, one she has been working hard in for months. The group responds to Kim's information by demonstrating shared feelings of anger, enabling Kim to feel safe enough to express a new emotion of anger and helping Kim form a new internal representation of herself and others. Kim's conditioned response was to be quiet and hold back to herself, which can be associated with an insecure attachment style. By showing attunement to Kim's sadness and anger, the group is allowing Kim to express a broader range of emotions, without avoiding them.

Group therapists will also welcome disagreements in groups to help the participants deal with them in a better manner and practice repairing a ruptured relationship (Yalom & Leszcz, 2021). Following a polyvagal lens, a discussion violates a person's social engagement system and causes them to become hyper-aroused. In group therapy, one can practice engaging the vagal brake which will reactivate the social engagement system after an argument. The therapist will assist the group back into social engagement and safety by focusing on eye contact, compassionate facial expressions and body movement, and calm and deep breathing (Flores & Porges, 2017). By co-regulating with the participants, the therapist is able to model emotional regulation after hyper-arousal making it easier to engage the vagal brake and easier for the arousal level to return to baseline.

Somatic Experiencing Interventions

Developed in 1970 by Dr. Peter Levine, Somatic Experiencing (SE), is a form of alternative psychotherapy aimed mostly at treating trauma and stress (Levine, 2015). Somatic experiencing is a good intervention for trauma relief that helps to recover the ANS to homeostasis, something insecurely-attached individuals struggle with. The brain's right

hemisphere, responsible for autonomic stress-management and emotional regulation develops during an infant's initial two years of life. This implies that those initial two years are of extreme importance and are shaped by the infant-caregiver relationship and attachment (Bretherton, 1994; Schore, 2001a). After birth, the infant will engage in closeness seeking behavior and the way the caregiver replies to this behavior will tell how the right hemisphere of the infant's brain and nervous system is formed.

One of the main goals of SE is to increase the client's interoception, a person's ability to be aware of bodily sensation by directing their perception inwards (Levine et al., 2018), which in turn would bring more awareness of the ANS changes that occur when exposed to threat. Most SE work is focused on the freeze response, in which a lot of energy that needs to be released is "locked up". Therapists that use an SE approach are always aware of their clients ANS movements, usually learning them and tracking their arousal and de-arousal. This pattern, usually called pendulation, is the oscillation between sympathetic and parasympathetic. The lack of pendulation can provide the therapist important information about their client. SE therapists are trained in monitoring their client's nervous system visually and to analyze the interoceptive descriptions the client gives them. Visually, therapists learn to differentiate between which system the client is currently at. For example, if a client is currently at the sympathetic nervous system, there can be signs of sweating, increased heart rate, increased breathing, muscle tensions, among others. If the parasympathetic nervous system is activated, the therapist might notice slower breathing, lower heart rate or in the case of dorsal vagus activation, dissociation (Levine et al., 2018).

The therapeutic process involves an initial support and exploration of sensations in the body. An SE approach is helpful and effective because people with trauma often lose the connection with their bodies and struggle with being present. An SE practitioner will help the client find their way back into their body by decreasing trauma-related arousal. A gradual

training to decrease trauma-related arousal occurs by building tolerance and acceptance of the trauma-related bodily sensations and emotions. This tolerance is built by identifying memories or parts of the body that have a reassuring and safe feeling (Kuhfuß et al., 2021). With the use of titration, as learned in class, the SE practitioner will slowly and carefully bring up a small reaction that the nervous system is able to handle without retraumatization occurring. The nervous system, within each titration, is given time to reintegrate without being overwhelmed. Although this process takes time, occurs slowly, and gradually, it allows for the nervous system to move closer to regulation and to process the trauma safely. The newly found awareness of the bodily sensations increases the discharge process and the corrective interoceptive awareness, clients can renegotiate their traumatic reaction and modify it in an adaptive way. Other than titration and pendulation, SE involves a technique called resourcing, in which the therapists helps the client identify the resources they have that helps them feel a sense of safety and stability. This can include relationships, strengths, places, and others. As discussed in class, resourcing is a way to ground the client in the process of titration so they remain regulated and to explore the body safely. Resourcing, however, is not only thinking about a safe place, for example, it is fully experiencing it and the feeling of safety it brings in the body. Having access to the inner self while experiencing feelings of safety, love, and peace in the body helps strengthen the capacity to digest the traumatic experience more safely. SE, by training the clients this way, aims at strengthening their ability to self-regulate and co-regulate. In assessing the client's progress, the therapist can look out for previous triggers that are no longer overwhelming for the client and also the better ability to self-regulate.

Group Attachment-Based Interventions (GABI)

Developed by Steele et al. (2010), GABI is aimed at aiding vulnerable and isolated parents that want to break the intergenerational pattern of traumatic experiences they grew up

in and offer their children a safer childhood. The intergenerational pattern of maltreatment often accompanies patterns of attachment learned from caregivers (Fonagy et al., 1993). GABI is an intervention that focuses on the parent-caregiver relationship and disrupts that pattern from repeating itself, teaching caregivers to respond adequately to their children's needs. This intervention focuses on identifying negative memories and uncovering positive memories, even if they are scarce, to help break the cycle (Knafo et al., 2018).

GABI is currently offered at a hospital-based clinic and occurs three times a week and twice daily (Knafo et al., 2018). The groups consist of the caregivers and their children, below the age of five. The intervention lasts two hours, the first hour is dyadic therapy given for the children and their parents to spend time together. There are many therapists in the room, one for each dyad. The therapist is there to aid the caregiver in attuning and responding to the child. During the second hour, the caregivers separate from their children and participate in a parent-group, led by a clinician, where they share their stressors, past traumatic events, and challenges faced by their child. The children remain with other therapists that help them regulate their emotions when the parent is absent. The parents and their children reunite fifteen minutes before the end and get ready to say goodbye. Social support is also embedded in the GABI method and can be seen when the groups share their experiences (Knafo et al., 2018).

GABI operates using the acronym R.E.A.R.I.N.G. in mind, which stands for Reflective functioning (RF); Emotional attunement (EA); Affect regulation (AR); Reticence; Intergenerational patterns; Nurturance; and Group context (Knafo et al., 2018). The first word stands for reflective functioning (RF), "the ability to acknowledge, understand, and reason with the mental states of others, as well as one's own" (p. 3) is considered of extreme importance to GABI for being strong predictor of child secure attachment and is modeled in every group. EA is modeled in the groups by helping the caregivers recognize, acknowledge,

attune, and respond to their infant's emotional needs. AR, related to the caregiver's EA, is when the caregiver teaches the child to self-regulate by explaining it, modeling it, encouraging it, and facilitating it with the help of the clinicians. Reticence is employed when the therapist is patient, slow, and observes before acting. By remembering to slow down, the therapists can ensure they are adopting a nurturing approach to the participants. Nurturance also plays an important role in GABI and is seen in the way the therapists interact with the children and their caregivers, helping to create a safe and trusting environment for healing. Relationship rapport is very important for healing trauma. Lastly, caregivers are encouraged to explore their childhood experiences with their caregivers and become aware of the intergenerational patterns that were learned and are being passed on to their children now. By doing so, the caregivers can begin to work towards unlearning them and breaking the cycle of maltreatment.

Limitations

In addition to the limitations talked about in each subheading on this paper, there are other limitations to this topic that need to be addressed. The number of research on insecure attachment and childhood traumatic experience faced in childhood in extensive, but few show the long-term consequences into late adulthood. Future research could include a longitudinal study with a bigger sample size and differing background and cultural identities. More research is also needed on the intersectionality of attachment style formation, trauma, and resiliency.

Another limitation that should be taken into account is that not all interventions mentioned are suitable for everyone. SE might not be a good fit for people who cannot focus their awareness inward and on their bodily sensations, this might be due to severe PTSD or severe traumatic experiences that makes the client unable and unwilling to do so. Clients who do not agree with the notion that trauma is stored in the body and not the event might also not

be a good fit for SE.

Conclusion

This paper analyzed attachment theory and trauma's consequences in an individual's life along their lifespan, focusing on their adult lives and future children. It took into account how these consequences can be intergenerationally transmitted in an ongoing cycle of maltreatment. It also suggested ways to intervene and stop this cycle from repeating itself with three important intervention approaches: Polyvagal theory, somatic experiencing, and group attachment-based intervention. The central question of "How do early childhood trauma and attachment formation difficulties impact/emerge in adulthood?" was answered by showing that childhood trauma can negatively affect the lives and well-being of older adults, specifically those with a high level of insecure attachments and that insecure attachments are linked to emotional dysregulation, low self-worth, unhelpful coping mechanisms, poor social abilities, and limited self-awareness.

A therapist that has knowledge of attachment theory can work more efficiently in its treatment. Being able to recognize a client's attachment style, level of emotional regulation, and nervous system is prepared to offer an effective and compassionate treatment (Bettmann, 2006). An understanding of attachment theory can aid in the case conceptualization and the planning of appropriate interventions.

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