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Why am I Like This? An Examination of the Impact of Early Childhood Experiences on Adult Attachment Style

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**WHY AM I LIKE THIS? AN EXAMINATION OF THE IMPACT OF EARLY
CHILDHOOD EXPERIENCES ON ADULT ATTACHMENT STYLE**

A Master's Thesis

Presented to

The Graduate College of

Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Experimental Psychology

By

Amaris Clay

July 2021

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Psychology

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ABSTRACT

Early childhood experiences and parental relationships have a lasting influence on future interpersonal relationships and the associated behaviors (Cortazar and Herreros 2010; Raby et al. 2015; Simons et al. 2014; Treger and Sprecher 2011). The proposed study is investigating the complex links between adverse childhood experiences, parenting style, and attachment style. The purpose of this study was to examine the lasting impact of early childhood factors and how they affect relationships in adulthood. The study intends to replicate previous research on parenting style and attachment style. The results of this study will add to the body of research centered on child and family development and attachment theory.

KEYWORDS: adverse childhood experiences, parenting style, childhood attachment style, adult attachment style, attachment style

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In the interest of academic freedom and the principle of free speech, approval of this thesis indicates the format is acceptable and meets the academic criteria for the discipline as determined by the faculty that constitute the thesis committee. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

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INTRODUCTION

Numerous studies on childhood adversity and parenting styles have made it clear that childhood experiences shape an individual and their future relationships (Cortazar and Herreros 2010; Raby et al. 2015; Simons et al. 2014; Treger and Sprecher 2011). One aspect greatly impacted by these factors is adult attachment style (Bartholomew and Horowitz 1991).

Attachment style is established early in life through parent-child interactions and helps to dictate future interpersonal interactions. Studies have found that concepts ranging from your health to interpersonal relationships are influenced by early life adversity and parenting style (Carroll et al. 2013; Taylor et al. 2004). Parenting style describes the methods and tactics parents use when raising a child (Baumrind 1966; Ebrahimi et al. 2017; Rohner and Ali 2016). The purpose of this study was to examine the lasting impact of early childhood factors and how they affect relationships in adulthood through the replication previous findings.

Previous findings have shown that instances of abuse, neglect, and rejection are the common experiences between an individual that has ACEs and one that has a cold parent (“About the CDC-Kaiser ACE Study” 2020; Baumrind 1966; Ebrahimi et al. 2017; Taylor et al. 2004). Findings have also shown the experience of ACEs to be positively correlated to an insecure attachment style in adulthood (Simons et al. 2014). Researchers also wanted to replicate the finding that reveals cold parental relationships to be associated with insecure romantic attachment (Díez et al. 2019). Lastly, researchers desired to replicate the findings of secure attachment being positively correlated to warm parenting, and insecure attachment being positively correlated to cold parenting (Díez et al. 2019; Simons et al. 2014).

The results of this study are relevant for the fields of therapy or counseling, child development, and parenting. Birch (2019) notes that three out of the eleven most common issues brought up in therapy were centered on relationship problems: gender dynamics in relationships, dealing with online dating, and establishing boundaries. Parental relationships and childhood experiences are often major points of interest when it comes to issues in romantic relationships (Raby et al. 2015; Simons et al. 2014). The results of this study can yield significant implications for parents raising children and adults on a journey of self-discovery. The results this study could provide further insight into the best practices, behaviors, or attitudes, for raising a well-adjusted child.

Adverse Childhood Experiences

Adverse childhood experiences (ACEs) refers to the potentially traumatic experience of neglect, household dysfunction, and abuse before 18 years of age (“About the CDC-Kaiser ACE Study” 2020; Santoro et al. 2018). Adverse childhood experiences also include low socioeconomic status, loss of a home, parent separation or divorce, and death of an immediate family member (Kuhlman et al. 2018). The Center for Disease Control (CDC) reports that approximately 61% of adults surveyed across 25 states had experienced at least one type of ACE, and about 1 in 6 reported they had experienced at least four or more types of ACEs (“Preventing Adverse Childhood Experiences” 2020). These adverse childhood experiences impact well-being, health, and physiology across the lifespan (Taylor et al. 2004; Taylor et al. 2011). The prolonged experience of ACEs has been linked to a heightened risk of disease and disability, social problems, risky behaviors, and premature death. These issues often occur due to the social, emotional, and cognitive impairments and disrupted neurodevelopment within the individual

(“About the CDC-Kaiser ACE Study” 2020; Taylor et al. 2004; Taylor et al. 2011). Social impairments often arise because children exposed to ACEs have distorted social databases. The databases are distorted because they are often formed through harsh, unsafe, and unpredictable social experiences (Ziv et al. 2018). Social database quality of content varies between individuals, but all databases include social schemes, the memories of past situations, acquired social rules, and the insight of appropriate and inappropriate social actions (Ziv et al. 2018). In turn, the children that experience ACEs knowledge of what is wrong or right, what is acceptable or unacceptable, and what is the proper response to particular social situations can diverge from the standard social expectations (Ziv et al. 2018). In adulthood, these maladaptive social skills contribute to impaired job performance, relationship problems, and an increased risk of perpetrating or being a victim of domestic violence (Benard 1991; Larkin et al. 2012).

ACEs and Physiological Responses

Beyond the social implications, ACEs have been found to affect an individual’s physiology. ACEs have been found to affect an individual’s physiology by impacting nervous system functioning and brain development. A physiological effect of adverse childhood experiences on nervous system functioning is toxic stress (Taylor et al. 2004). Toxic stress is a dangerous stress system response that results from recurrent, intense, or extended activation of the body’s stress response systems (Shonkoff et al. 2012). Prolonged or chronic exposure to multiple psychosocial stressors, like child abuse or food insecurity, can lead to permanent abnormalities and dysregulation in brain structures like the prefrontal cortex, amygdala and hippocampus (Danese and McEwen, 2012; Shonkoff et al. 2012). The plasticity (moldability) of the early childhood brain makes it sensitive to chemical influences, so heightened levels of stress

hormones significantly interrupt the still developing composition of stress sensitive regions. These abnormalities can cause issues across the lifespan with learning, memory, and other aspects of executive functioning (Danese and McEwen 2012; Taylor et al. 2011). In the prefrontal cortex of the brain, the prolonged exposure to stressors results in the shortening of dendrites (the branch-like projections of a neuron that receives information from neighboring neurons) and impairments in attention. In the amygdala (brain structure associated with emotional responses), chronic stress exposure causes increased dendritic growth and behavioral manifestations such as heightened responses to unlearned fear and fear conditioning. For the hippocampus (brain structure associated with learning and memory), chronic stress causes size reduction and structural remodeling of the structure. The reduction in size and the change in shape contribute to impairments in spatial, declarative, and contextual memory (Danese and McEwen 2012). These physiological dysregulations contribute to the manifestation of the mental, physical, and social impairments that are commonly reported among individuals who experience adverse childhood events.

The dysregulation caused by toxic stress also puts individuals at an increased risk for physical and mental health disorders, and impaired social functioning. In response to a stressful event, the hormones epinephrine and norepinephrine are released from the adrenal glands. If released in excess, these hormones can lead to elevated blood pressure and heart rate, suppression of cellular immune functioning, and the creation of neurochemical imbalances (Shonkoff et al. 2012; Taylor et al. 2011). These dysregulations are what contribute to the negative impact that ACEs have on health and why the individuals that experience ACEs are at a heightened risk of disease, disability, and psychopathology. Overall, ACEs have serious consequences for an individual and continue to impact an individual past the initial experience.

Previous research has found that harsh early adversities increased the risk of adult psychopathology, even though the participants were removed from their problematic environments due to being adopted (van der Vegt et al. 2009). This study, as well as others, emphasize the enduring impact of ACEs and stresses the need for early intervention.

Fortunately, the physical, mental, and social effects of toxic stress and ACEs can be combatted through the building of resilience. Resilience refers to the ability to thrive and overcome in traumatic and or toxic environments, by gaining specific individual strengths and benefiting from environmental protective factors (Richards et al. 2016). Research has noted that resilient children have five consistent traits that can impact their socio-emotional and cognitive development: social competence, problem-solving skills, autonomy, sense of purpose, and sense of future (Benard 1991). Low resilience development in early years has been linked to the uptake of health-harming behaviors, like smoking, heavier alcohol consumption, drug use and high calorie, low nutrient diets, in adulthood (Bellis et al. 2017). Resiliency is built through protective factors at an individual, socio-environmental, and familial level. At an individual level, interventions that promote self-efficacy, personal coping skills, and problem-solving skills aid in building resiliency (Richards et al. 2016). While at the socio-environmental level, interventions centering on peer support, non-punitive social structures, safe neighborhoods, and involvement in prosocial organizations aid in children and adolescents forming of resiliency (Richards et al. 2016). Family-level interventions focus on family cohesion, supportive family members, positive parent-child attachment, and parental warmth. The warmth of accepting parents defends against the damaging effects of toxic stress caused by adverse childhood experiences (Carroll et al. 2013; Richards et al. 2016). So, parents, and the methods and tactics they utilize, have an important role in determining how ACEs are experienced and the impact they have on the child.

Parenting Style

Parenting style describes the methods and tactics parents use when raising a child (Baumrind 1966; Ebrahimi et al. 2017). Research suggests that parents can fall into the acceptance-responsiveness dimension or the demandingness-permissiveness dimension (Ebrahimi et al. 2017). Both of these dimensions characterize parents as being either accepting or rejecting of their children. Accepting parents, also known as warm parents, are characterized as being, rational and supportive. Rejecting parents, also known as cold parents, can restrict the autonomy of the child, be forceful, inconsistent, neglectful, insensitive, and may value obedience and punishment (Baumrind 1966; Ebrahimi et al. 2017). The warmth (acceptance-responsiveness) dimension represents a parent's intimacy rate and support of their child. The cold (demandingness-permissiveness) dimension represents control, and a parent's expectation for the child to regulate their own behavior and activities (Ebrahimi et al. 2017). Four parenting styles are derived from these dimensions: authoritative, authoritarian, permissive, and neglecting (Baumrind 1966). Authoritative parents are described by having high levels of both acceptance and demandingness. These types of parents treat their children with warmth and kindness, promote their children's autonomy, and hold them to reasonable standards. Children with authoritative parents tend to do well academically, have low rates of behavior problems, and have strong peer relationships. Authoritarian parents are described as having high levels of demandingness and low levels of acceptance. These parents are less sensitive, less flexible, expect obedience, and place several restrictions and rules on their children. In excess, these behaviors can be deemed abusive and cold, and are thus categorized as an ACE. The children of authoritarian parents have been found to have lower self-confidence, display more aggression, have frequent depressive moods, and have higher rates of substance use. Permissive parents have

a high level of acceptance but a low level of demandingness. While these parents are responsive and accepting, they are also inconsistent, allow the child to regulate themselves, do not demand responsibility, and do not enforce restrictions. In turn, their children are sociable, but have poor impulse control, and are prone to engage in risky and delinquent behaviors. Neglectful parents have low levels of both acceptance and demandingness. Neglectful parenting is categorized as an ACE because parents are not involved in their children's lives. The children of these parents have the worst outcomes. They do poorly socially and academically, have the highest rates of substance use, and have more behavior problems (Baumrind 1966; Ebrahimi et al. 2017; Greening et al. 2010). Scales related to warmth and affection, hostility and aggression, indifference and neglect, and undifferentiated rejection, are often used to assess the degree of parental acceptance and rejection in childhood (Rohner and Ali 2016). Parenting style is a complex and detailed concept that considers multiple varying factors of parent-child dynamics or relationships such as behaviors, household size, and culture. With such a plethora of mediating variables acting upon parenting style, there is difficulty in pinpointing the variables that have the most significant effect on it. Though this study only examines two variables in relationship to parenting style, these variables have been found to be the most largely influenced by parenting style (Ainsworth 1964; Baumrind 1966; Ebrahimi et al. 2017; Greening et al. 2010).

Parenting Style and Attachment Style

Parental relationships are fundamental in setting patterns for other interpersonal relationships (Simons et al. 2014). Parenting style determines childhood and adulthood attachment styles through consistent usage or performance of certain behaviors, methods, and tactics related to rearing a child. Attachment style is established early in life through parent-child

interactions and helps to dictate future interpersonal interactions. Attachment theorists' postulate that a caregiver's responsiveness to the child's needs and emotional availability have a significant influence on the child's developing personality (Bowlby 1973). Research investigating parenting styles has noted that children who received warm parenting behaviors such as expressing affection, nurturing behaviors, and having positive communication were engaged in loving and warm romantic relationships in adulthood (Simons et al. 2014). The same study found that cold, hostile, harsh parenting with incidences of physical punishment led the child to display the same aggressive and hostile behaviors in their adult romantic relationships (Simons et al. 2014). Further, research has found that adults that experienced insensitive maternal care show less inhibition when arguing with their romantic partners (Raby et al. 2015). Low levels of parental warmth have been found to be linked to higher levels of attachment anxiety and avoidance behaviors in romantic relationships (Díez et al. 2019). The attachment bond formed between children and their guardians serve as an internal working model for what adult relationships should look like, and therefore influence adulthood attachment patterns. (Bowlby 1969). These models are used to interpret, form, and predict the behaviors of partners and ourselves in relationships (Bretherton 1990). The two key features in internal working models of attachment are: (a) if the attachment figure is the type of individual to be responsive to calls for support and help and (b) whether or not the self is determined to be the type of individual that anyone, especially the attachment figure, responds to in a helpful way. These tenets boil down to a positive or negative view of self and others (Bartholomew and Horowitz 1991).

In children, attachment style is established through the rate of responsiveness and consistency in interactions with the primary caregiver (Ainsworth 1964). Children can be

categorized as securely attached, insecure-avoidant, or insecure-ambivalent. In some research, attachment style is simplified as securely or insecurely attached. Securely attached children have parents that are highly responsive to their needs, and in turn feel confident and safe in their environments (Ainsworth et al. 1978). They have a positive view of self and believe that others will be supportive during times of need. The parents of securely attached children tend to offer structure as well as warmth. Insecure-avoidant children have dismissive and insensitive parents, and in turn the children become emotionally independent from their caregivers, and do not seek their comfort in times of distress. They have a positive view of self and believe others to be unsupportive. The parents of these children tend to use an authoritarian parenting style. Insecure-ambivalent children can be clingy and dependent, but still reject their parents due to their inconsistent response rates (Ainsworth et al. 1978). These children hold negative views of both self and others. Permissive parenting style is associated with an insecure-ambivalent attachment style in children due their inconsistency and the lack of structure.

The patterns of attachment and internal working models set during childhood are relatively stable and continue into adulthood. For adults, fearful, preoccupied, dismissing, and secure are the four attachment styles (Bartholomew and Horowitz 1991). Attachment style is often measured through interviews or forced-response self-report. Some scales, such as the Adult Attachment Scale, list three styles of attachment including secure, anxious, and avoidant (Collins and Read 1990). Anxious and avoidant are the insecure styles of attachment (Collins and Read 1990). Adults with an anxious/ preoccupied attachment style often experience a feeling of unworthiness or lacking lovability, but still aim to gain the approval and acceptance of others. They are also characterized by being overly involved in close relationships and have dependency issues (Bartholomew and Horowitz 1991; Treger and Sprecher 2011). These adults were children

with an insecure-ambivalent attachment to their parents that utilized a permissive/ unstructured parenting style. Adults with a fearful/avoidant attachment style avoid close relationships with others to protect themselves from anticipated rejection, and have difficulty trusting or depending on others. These individuals also had an insecure/ avoidant attachment style during childhood due to their parent's high level of rejection, coldness, and control. The fearful-avoidant attachment is like the dismissive style because they both avoid close relationships to not get hurt, had insecure-avoidant attachment during childhood, and experienced an authoritarian parenting style. In addition to these characteristics, those with the dismissive style also value their independence and self-sufficiency and prefer to not have others depend on them. Lastly, adults with a secure attachment style are comfortable being emotionally close to others and maintain their personal autonomy. They are not concerned with being accepted by others, or having others depend on them. These adults were securely attached children with parents that employed a warm and supportive approach to parenting (Bartholomew and Horowitz 1991; Treger and Sprecher 2011). Attachment styles, whether secure or insecure, dictate the patterns and behaviors displayed in adult romantic relationships.

Purpose of Study

The purpose of this study was to examine the lasting impact of early childhood factors and how they affect relationships in adulthood through the replication of previous findings. Based on previous research findings, parenting style is the key link between ACEs and adult attachment style. Cold parenting behaviors, the instances of abuse, neglect, and rejection, are an ACE (Baumrind 1966; Ebrahimi et al. 2017). The warm or cold behaviors and tactics elicited through parenting style dictate how the ACEs are experienced. Warm parenting behaviors build

resilience within the child by providing protective factors at the familial level, which in turn lessen the negative impact of ACEs (Richards et al. 2016). When parenting behaviors and tactics, whether warm or cold, are relatively stable, internal working models for other relationships are built. These internal working models are used to interpret, form, and predict the behaviors of partners and ourselves in relationships (Bowlby 1969; Bretherton 1990). Since the internal working models formed during childhood are relatively stable and continue into adulthood, they greatly contribute to the formation of adult attachment style (Bowlby 1969; Bretherton 1990).

Hypotheses

Hypothesis 1. It was predicted that childhood adversity would be positively correlated to cold parenting and negatively correlated to warm parenting. Previous research has shown that instances of abuse, neglect, and rejection are the common experiences between an individual that has ACEs and one that has a cold parent (“About the CDC-Kaiser ACE Study” 2020; Baumrind 1966; Ebrahimi et al. 2017; Taylor et al. 2004).

Hypothesis 2. It was predicted that childhood adversity would be positively correlated to an insecure attachment style. A previous study investigating childhood experiences and later patterns of interaction with romantic partners found that childhood adversity and an insecure attachment style were positively correlated (Simons et al. 2014). Previous research has found that instances of abuse and neglect at the hands of a parental figure negatively influence a child’s internal working model which in turn contributes to an insecure adulthood attachment pattern (Bowlby 1969; Bretherton 1990; Taylor et al. 2004; Taylor et al. 2011).

Hypothesis 3. It was predicted that the combination of childhood adversity and cold parenting would be positively correlated to an insecure adult attachment style. Previous

studies have characterized cold parenting and the experience of childhood adversity as being contributors to lower quality family relationships (“About the CDC-Kaiser ACE Study” 2020; Taylor et al. 2004; Taylor et al. 2011). A study investigating romantic attachment and familial relationships found that parental relationships perceived to lack affection, support and warmth were positively correlated with insecure romantic attachment (Díez et al. 2019).

Hypothesis 4. It was predicted that cold parenting would be positively correlated to an insecure adult attachment style and warm parenting would be positively correlated to the secure adult attachment style. A previous study investigating childhood experiences and later patterns of interaction with romantic partners found secure attachment to be positively correlated to supportive parenting, and negatively correlated to harsh parenting (Simons et al. 2014). Various previous research has found that warm parenting behaviors contribute to secure adulthood attachment patterns (Bartholomew and Horowitz 1991; Taylor et al. 2004; Taylor et al. 2011; Treger and Sprecher 2011).

METHODS

Participants

Participants were undergraduate students enrolled in an introductory psychology course at a medium-large Midwestern university. A total of 136 students completed the study. Of these participants, 97 identified as female and 39 identified as male. Participants had a mean age of 19.47 ($SD= 2.5$) with a range of 18 to 33 years old. Approximately 83% of participant self-reported their racial/ethnic background as Caucasian/White, and 17% identified as a minority group.

Materials

Demographic Questionnaire. The demographics questionnaire included items to verify participant's age, biological sex, socioeconomic status, and college level.

Skinner's Six Dimension's of Parenting. This scale uses 25 items on a 4-point Likert scale to measure dimension of parenting. The six dimensions of parenting model measures six major factors: warmth, rejection, structure, chaos, autonomy support, and coercion. The "perceived warm" dimension consists of the warmth, structure, and autonomy support factors. The "perceived cold" dimension includes the rejection, chaos, and coercion factors. The "cold parent" variable is a composite variable created from the dimensions of rejection, coercion, and chaos. This new variable better captures the complexity of parenting. An example of a rejection item is, "At times, when I asked for things from my parents they made me feel like a burden". An example of a warmth item is, "My parents and I did special things together" (Skinner et al. 2005). See Appendix A- Six Dimensions of Parenting.

Adult Attachment Scale (AAS). This scale used 18 items on a 5-point Likert scale measuring the attachment styles of secure, anxious, and avoidant. The scale has a reliability of $\alpha=.70$ (Graham and Unterschute 2014). For this study, anxious and avoidant were combined to create the variable of insecure attachment. An example of a secure item is, “I am comfortable having others depend on me”. An example of an insecure item is, “I want to completely merge with another person” (Collins and Read 1990). See Appendix B- Adult Attachment Scale.

Adverse Childhood Experiences Questionnaire (ACE-Q). This measure was originally developed by the CDC and Kaiser Permanente. The 10-item questionnaire retrospectively assessed the exposure to adverse events during childhood such as abuse, neglect, familial conflict, and household dysfunction. The higher the score, the more adverse events experienced (“About the CDC-Kaiser ACE Study” 2020; Vallejos et al. 2017). One item asks, “Did you often feel that you didn’t have enough to eat, had to wear dirty clothes, and had no one to protect you? Or, your parents were too drunk or high to take care of you or take you to the doctor if you needed”? The questionnaire has been found to be valid and has a test-retest reliability of .64 (Dube et al. 2004). See Appendix C- ACE-Q.

Procedure

This study (IRB-FY2021-86) approved by Missouri State University’s IRB on September 30, 2020, see Appendix D- IRB Letter of Approval. Participants signed up for the study through the University’s research portal. Upon completing sign up, participants automatically received a link to the Qualtrics online survey system to respond to the four questionnaires. Before completing the questionnaires, participants had to sign informed consent, see Appendix E-

Informed Consent. When scoring the data, a composite variable to represent cold parenting was created to provide take into account the details of cold parenting behaviors.

RESULTS

A series of Pearson Correlations were conducted to analyze the strength of the relationship between variables. When analyzing hypothesis one, the relationship between childhood adversity and parenting styles (Table 1), childhood adversity was positively correlated to cold parenting, $r(134) = .515, p < .001$ and negatively correlated to warm parenting, $r(134) = -.499, p < .001$. Analyzing the strength of the relationship between adverse childhood experience scores and insecure attachment style (Table 2), the results revealed that childhood adversity is positively correlated to an insecure attachment style $r(134) = .234, p = .006$. Analyzing the third hypothesis (Table 3), the results found that the combination of childhood adversity and cold parenting was positively correlated to an insecure adult attachment style, $r(134) = .436, p < .001$. The final Pearson Correlation analysis (Table 4) revealed that cold parenting was positively correlated to an insecure adult attachment style, $r(134) = .380, p < .001$, while warm parenting is positively correlated to a secure adult attachment style, $r(134) = .418, p < .001, N = 136$.

Table 1 Correlation between parenting style and childhood adversity

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3
1. ACE Score	136			-		
2. Cold Parenting	136			0.515***	-	
3. Warm Parenting	136			-0.499***	-0.546***	-

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 2 Correlation between childhood adversity and insecure attachment style

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2
1. ACE Score	136			-	
2. Insecure Attachment	136			0.234***	

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3 Correlation between childhood adversity with cold parenting and insecure attachment style

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2
1. ACE plus Cold	136			-	
2. Insecure Attachment	136			0.436***	

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4 Correlation between parenting style and attachment style

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4
1. Insecure Attachment	136			-			
2. Secure Attachment	136			-0.361***	-		
3. Cold Parenting	136			0.380***	-0.321***	-	
4. Warm Parenting	136			-0.313***	0.418***	-0.620***	-

* $p < .05$, ** $p < .01$, *** $p < .001$

DISCUSSION

Conclusion

The purpose of this study was to examine the lasting impact of early childhood factors and how they affect relationships in adulthood through the replication of previous findings. The initial hypothesis for the study predicted that childhood adversity would be positively correlated to cold parenting, and negatively correlated to warm parenting. This prediction was supported by the data. Previous research has characterized cold parenting behaviors to be an adverse childhood experience (“About the CDC-Kaiser ACE Study” 2020; Kuhlman et al. 2018; Santoro et al. 2018). Cold parents are characterized as being harsh, inconsistent, neglectful, and forceful (Baumrind 1966; Ebrahimi et al. 2017). Parental abuse and neglect, cold parenting, are major tenets of childhood adversity (“About the CDC-Kaiser ACE Study” 2020; Kuhlman et al. 2018; Santoro et al. 2018). Research has shown that instances of abuse, neglect, and rejection are the common experiences between an individual that has ACEs and one that has a cold parent (Baumrind 1966; Ebrahimi et al. 2017).

The second hypothesis predicted that childhood adversity would be positively correlated to an insecure attachment style. Researchers for the current study found a positive correlation between childhood adversity and an insecure attachment style. Past research that has found that the instances of abuse, neglect, and household dysfunction can cause children to become emotionally independent from their caregivers (“About the CDC-Kaiser ACE Study” 2020; Taylor et al. 2004; Taylor et al. 2011). The emotional independence is caused by the inconsistency of the parent, the fear of the parent, or lack of trust the child has within the parent (Ainsworth et al. 1978). Secure attachment is formed through consistency, responsiveness, and

warmth, so when these vital factors are not present during childhood, an insecure adult attachment style is formed (Bowlby 1969). These parent-child bonds also serve as internal working models for future relationships (Bretherton 1990). So, instances of abuse and neglect at the hands of a parental figure negatively influence a child's internal working model which in turn contributes to an insecure adulthood attachment pattern (Bowlby 1969; Bretherton 1990; Taylor et al. 2004; Taylor et al. 2011).

The third hypothesis predicted that the combination of childhood adversity and cold parent would be positively correlated to an insecure adult attachment style. This prediction was supported by the data as well and fell in line with the findings of previous research. A study investigating romantic attachment and familial relationships among emerging adults found that parental relationships perceived to lack affection, support and warmth were associated with insecure romantic attachment (Díez et al. 2019). Like cold parenting, the experience of childhood adversity contributes to poorer quality family relationships (“About the CDC-Kaiser ACE Study” 2020; Taylor et al. 2004; Taylor et al. 2011). Like the rationale for the second hypothesis, negative experiences with parental figures negatively influence a child's internal working model, which in turn contributes to an insecure adulthood attachment pattern (Bowlby 1969; Bretherton 1990; Taylor et al. 2004; Taylor et al. 2011).

The fourth hypothesis predicted that cold parenting would be positively correlated to an insecure adult attachment style and warm parenting would be positively correlated to a secure adult attachment style. This final prediction was also supported. Warm parenting behaviors like expressing affection, nurturing behaviors, and having positive communication contribute to secure adulthood attachment patterns (Bartholomew and Horowitz 1991; Taylor et al. 2004; Taylor et al. 2011; Treger and Sprecher 2011). A previous study investigating childhood

experiences and later patterns of interaction with romantic partners found secure attachment to be positively correlated to supportive parenting, and negatively correlated to harsh parenting (Simons et al. 2014).

Implications

This study has the potential to add to the ever-growing body research on the effect's early childhood experiences on attachment style. The results yielded from this study can be beneficial to child and family development researchers that are dedicated to discovering the best practices for raising well-adjusted children because they revealed that the actions of parents and the conditions they provide during childhood have a significant influence upon adult attachment patterns. These results can make parents more aware of their behaviors towards their children. Especially the behaviors, that can positively contribute to a secure attachment style, like being consistent, expressing affection, and having positive communication. Parents can also become more diligent in their role of building their child's resilience. To reiterate, resilience refers to the ability to thrive and overcome in traumatic and or toxic environments, by gaining specific individual strengths and benefiting from environmental protective factors (Richards et al. 2016). Parents can become in practicing methods and tactics that will enhance their child's social competence, problem-solving skills, autonomy, sense of purpose, and sense of future. This study is an informative and thorough source for the adults that are interested in how their early life experiences have shaped their current relationships. Birch (2019) notes that three out of the eleven most common issues brought up in therapy were centered on relationship and dating problems. The issues included gender dynamics in relationships, setting boundaries in relationships, and dealing with online dating. Parental relationships and childhood experiences

are also common, major points of interest when it comes to issues in romantic relationships (Raby et al. 2015; Simons et al. 2014). In therapy, these results can provide points for further discussion and exploration of these issues. For example, a therapist could ask the client to reflect on a childhood experience with a parent that could have influenced their communication style within their relationship. The results yielded have the potential to lead readers to engage in introspection, realize deeper issues, provide new information, and even influence future behaviors.

Limitations

There were several limitations for the study. One limitation of the study is the lack of diversity among the sample size. With 83% of the participants self-identifying as White/Caucasian, this greatly decreases the generalizability of the results. A more diverse sample could also reveal trends among parenting styles because child-rearing practices vary among cultures. Western ideas and beliefs on parenting dominate scientific research and mainstream thinking about parent-child relationships (Choi et al. 2013). While authoritarian parenting is marked by low support and high control, it has been found to be beneficial for certain ethnic groups, such as Asian Americans (Choi et al. 2013). Research investigating the parenting style of Asian Americans has found that an Asian American parents' affection is not conveyed through verbal, physical, or emotional expressions, but through close monitoring, devotion, instrumental support, and support for education (Choi et al. 2013). So, an Asian American participant could have potentially been incorrectly categorized as receiving cold parenting because their culture was not taken into consideration. Cultural dynamics have a significant influence on child-rearing practices and should be considered and evaluated in future research to produce more reliable and

valid results. An additional limitation is the drawback of utilizing correlational data. Correlation does not equal causation, it only shows the strength and direction of a relationship. A regression analysis or structural equation modeling could have been utilized to find the variable that was most impactful and to build a more complete picture of the relationships between variables. Though the results were significant, they do not tell the full story and do not make as strong of a case as sophisticated analysis or experimental data or methods could have. Experimentally, these variables could be examined using skin conductance and stress inducing stimuli. Skin conductance or electro dermal activity, acts as a sensor for physiological and psychological arousal (ReleaseWire 2017). Previous research has found that adults who have faced a high amount of childhood adversity have also shown a dulled skin conductance response due to the dysregulation of stress systems, such as the autonomic nervous system (Taylor et al. 2004). Cold parenting has also been linked to lower skin conductance levels in response to stressful or challenging situations (Erath et al. 2009). Participants connected to skin conductance could be presented with stimuli known to be stress inducing, like babies crying, to measure their levels of arousal. The results of their skin conductance reading along with their questionnaire scores could strengthen the study and emphasize the potential lasting impact that ACEs have on biological systems. This study utilized variables that are complex and that can be measured in various different ways. For example, parenting style and ACES are complex and detailed concepts that considers multiple varying factors of parent child dynamics or relationships like as, behaviors, household size, and culture, and thus requires detailed variables to study properly. This study did not fully take into account all of the details. These details taken into account could have yielded different, opposing results.

Future Directions

A future study could examine the impact that childhood adversity, parenting style, and adult attachment style have on the physiological arousal to positive and negative aspects of a romantic relationship. The positive aspect of falling in love and the negative aspect of infidelity could be used as stimuli for skin conductance. Research is lacking in skin conductance reactions related to relationship concepts. There is also lack of research examining the link between attachment style and physiological reaction to stimuli. Adding physiological data could potentially add to the growing body of research on parent-child relations and the impact of early-life stress on biological systems. Future studies could also take into account the factors of household size and culture when investigating parenting style and ACEs. Previous research has found that cold parenting may be beneficial for certain minority groups (Halgunseth et al. 2006). Overall, future research could greatly benefit from the further exploration of those moderating factors.

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APPENDICES

Appendix A- Six Dimensions of Parenting

Please answer each question as accurately as possible based on your first 18 years of life. Answer the questions based on your main parent or parental figures. This might include step-parents, grandparents, etc.

	1 = Not True at All	2= Not Very True	3= Sort of True	4= Very True
My parents knew a lot about what went on with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents really knew how I felt about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents and I did special things together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents let me know they love me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents didn't understand me very well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes I felt like my parents felt I was hard to like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1 = Not True at All	2= Not Very True	3= Sort of True	4= Very True
At times, when I asked for things from my parents they made me feel like a burden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need more than my parents had time to give me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents made it clear what would happen if I did not follow their rules.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents made it clear to me what they expected from me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents expected me to follow our family rules.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When my parents told me they would do something, they did it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 = Not True at All	2= Not Very True	3= Sort of True	4= Very True
When I got in trouble, my parents were not very predictable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I didn't seem to know what my parents expected from me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents changed the rules a lot at home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents would get mad at me with no warning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents encouraged me to express my feelings even when they're hard to hear.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents encouraged me to express my opinions even when they didn't agree with them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1 = Not True at All	2= Not Very True	3= Sort of True	4= Very True
My parents encouraged me to be true to myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents expected me to say what I really think.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents and I fought a lot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To get me to do something, my parents often yelled at me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents sometimes felt that they had to push me to do things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents and I often got into power struggles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B- Adult Attachment Scale

Please read each of the following statements and rate the extent to which it describes your feelings about romantic relationships. Please think about all your relationships (past and present) and respond in terms of how you generally feel in these relationships. If you have never been involved in a romantic relationship, answer in terms of how you think you would feel.

1= Not at All Characteristic of Me, 5= Very Characteristic of Me

		1= Not at All Characteristic of Me	2	3	4	5= Very Characteristic of Me
I find it relatively easy to get close to others.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not worry about being abandoned.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it difficult to allow myself to depend on others.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In relationships, I often worry that my partner does not really love me.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

		1= Not at All Characteristic of Me	2	3	4	5= Very Characteristic of Me
I find that others are reluctant to get as close as I would like.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am comfortable depending on others.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1= Not at All Characteristic of Me	2	3	4	5= Very Characteristic of Me
I do not worry about someone getting too close to me.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find that people are never there when you need them.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am somewhat uncomfortable being close to others.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In relationships, I often worry that my partner will not want to stay with me.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		1= Not at All Characteristic of Me	2	3	4	5= Very Characteristic of Me
I want to merge completely with another person.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My desire to merge sometimes scares people away.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1= Not at All Characteristic of Me	2	3	4	5= Very Characteristic of Me
I am comfortable having others depend on me.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know that people will be there when I need them.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am nervous when anyone gets too close.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find it difficult to trust others completely.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		1= Not at All Characteristic of Me	2	3	4	5= Very Characteristic of Me
Often, partners want me to be closer than I feel comfortable being.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not sure that I can always depend on others to be there when I need them.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix C- ACE-Q

For each question, please indicate if the answer is "Yes" or "No"

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household often ...

Swear at you, insult you, put you down, or humiliate you?

or

Act in a way that made you afraid that you might be physically hurt?

Yes

No

2. Did a parent or other adult in the household often ...

Push, grab, slap, or throw something at you?

or

Ever hit you so hard that you had marks or were injured?

Yes

No

3. Did an adult or person at least 5 years older than you ever...

Touch or fondle you or have you touch their body in a sexual way?

or

Try to or actually have oral, anal, or vaginal sex with you?

Yes

No

4. Did you often feel that ...

No one in your family loved you or thought you were important or special?

or

Your family didn't look out for each other, feel close to each other, or support each other?

Yes

No

5. Did you often feel that ...

You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?

or

Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

Yes

No

6. Were your parents ever separated or divorced?

Yes

No

7. Was your mother or stepmother:

Often pushed, grabbed, slapped, or had something thrown at her?

or

Sometimes or often kicked, bitten, hit with a fist, or hit with something hard?

or

Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?

Yes

No

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?

Yes

No

9. Was a household member depressed or mentally ill or did a household member attempt suicide?

Yes

No

10. Did a household member go to prison?

Yes

No

Appendix D- IRB Letter of Approval

To: Amber Abernathy

Psychology

RE: Notice of IRB Approval

Submission Type: Initial

Study #: IRB-FY2021-86

Study Title: Nature vs. Nurture: Examining the role that Oxytocin Polymorphism Receptors and Early Childhood Environments Play on Adult Social Interactions

Decision: Approved

Approval Date: September 30, 2020

This submission has been approved by the Missouri State University Institutional Review Board (IRB). You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB.

This study was reviewed in accordance with federal regulations governing human subjects research, including those found at 45 CFR 46 (Common Rule), 45 CFR 164 (HIPAA), 21 CFR 50 & 56 (FDA), and 40 CFR 26 (EPA), where applicable.

Researchers Associated with this Project:

PI: Amber Abernathy

Co-PI:

Primary Contact: Rebekkah Wall

Other Investigators: Amaris Clay

Appendix E- Informed Consent

Nature vs. Nurture: Examining the role that Oxytocin Polymorphism Receptors and Early Childhood Environments Play on Adult Social Interactions

Part One

Consent to Participate in a Research Study

Missouri State University - College of Health & Human Services

Principal Investigator: Dr. Amber Abernathy

Introduction

You have been asked to participate in a research study. Before you agree to participate in this study, it is important that you read about and understand the study and the procedures it involves. If you have any questions about the study or your role in it, you can contact the investigator (Dr. Abernathy) at: amberabernathy@missouristate.edu

You will need to type your name in the box below giving us your permission to be involved in the study. Taking part in this study is entirely your choice. If you decide to take part, but later change your mind, you may stop at any time. If you decide to stop, you do not have to give a reason and there will be no negative consequences for ending your participation.

Purpose of this Study

The goal of the current two-part study is to examine the role of specific traits and biological factors on adult social interactions. Part one of this study will explore the role of various environmental factors such as childhood adversity, parenting styles, social status, emotional intelligence, empathy, and adult attachment styles on adult interactions.

Description of Procedures

If you decide to take part in this study, you will be asked to fill out a series of questionnaires online. This part of the study will take about 30 - 45 minutes to complete. You will be asked at the end of these questionnaires if you are willing to participate in the second part of the study. If so, you will be contacted and asked to set up a time to come to the research lab in Hill Hall. You do not have to participate in the second part of the study. Any information about you will be kept confidential. To protect your privacy, you will be assigned a coded number and your name, or any other identifying information will not appear on the questionnaire.

What are the risks?

There are no risks of harm or discomfort. The likelihood of physical, psychological, social, legal, or economic harm is low considering the nature of this study. However, participants may experience psychological discomfort when answering questions about their backgrounds.

What are the possible benefits?

This two-part study examines the interplay of biology (nature) and environmental factors (nurture) on psychosocial development. The resulting information will help increase the current knowledge base surrounding "nature versus nurture" and how both can impact development and social relationships. Specifically, part one of the study will explore how experiences early in life may impact our social interactions as adults.

How will your privacy and confidentiality be protected?

Information about you will be coded and all your data will receive an arbitrary number. Your name will not appear on any data. The information gathered will be accessible only by the investigators and it will be kept in a locked facility on campus and in password protected computers. You will not be identified by name in any publications that result from this research. All information from this study will be destroyed (shredded or cleared using data cleaning software) 3 years after the study ends.

PARTICIPANT CONSENT

If you want to participate in this study, Nature vs. Nurture: Examining the role that Oxytocin Polymorphism Receptors and Early Childhood Environments Play on Adult Social Interactions, you are required to type your name and date below as an indication of your willingness to participate:

I have read and understand the information in this form. I have been encouraged to ask questions. I have also been informed that I can withdraw from the study at any time. By typing in my name and date, I voluntarily agree to participate in this study.