CHILDHOOD EXPERIENCES, ADULT ATTACHMENT STYLES AND MATERNAL OUTCOMES

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Abstract: Research has shown that adverse childhood experiences (ACEs) can have devastating impacts across a person's life span, including poor health choices, disease and early death. Positive childhood experiences (PACEs) have been shown to buffer some of the effects of ACEs. This study examined how ACEs and PACEs impact attachment beginning in early childhood, and its impacts on parenting practices, substance use, and intimate partner violence. Specifically, this study examined parental reflective functioning (PRF). PRF can impact child outcomes, including developmental, social, and emotional health. The first three models examined the associations between ACEs, PACEs, adult attachment styles, and parental reflective functioning. The last two models of this study examined how childhood neglect and PACEs are associated with substance use and intimate partner violence and whether there are mediation effects with adult attachment styles.

Results of the analyses showed that dismissive adult attachment mediated the association between two subtypes of PRF – PRF certainty of mental states and PRF pre – non mentalizing modes. Both of these subtypes of PRF have been shown to be associated with poor parenting practices and poor childhood outcomes. This study found that dismissive adult attachment style was positively associated with age. Dismissive adult attachment style – while thought to be characterized by detachment from intimate relationships – may indeed be characterized by autonomy and increased levels of maturity.

Results did not demonstrate that adult attachment style mediated the association between ACEs, PACEs, and substance use or intimate partner violence. However, there were trends of significant findings between ACEs, PACEs and adult attachment styles. For example, ACEs was significantly associated with ambivalent attachment style and negatively associated with secure adult attachment style, while PACE's was negatively associated with ambivalent adult attachment and positively associated with secure adult attachment.

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CHAPTER I

INTRODUCTION

Ever since Dr. Vincent Felitti and Dr. Robert Anda (1998) published their article about the impact of adverse childhood experiences (ACEs) and their immense short-term and long-term health impacts on children and adults, researchers have re-focused on how ACEs are examined (Hays-Grudo & Sheffield Morris, 2020). Felitti and Anda found that there was a powerful dose response relationship between the extent of ACE exposure to household dysfunction, abuse, and neglect during childhood and the correlation to leading causes of adult deaths – in fact lifestyle choices that result from ACE exposure have been called the "actual cause of death" (Felitti et al., 1998, p. 244). Exposure to ACEs has been linked to poor outcomes among children who have been subjected to abuse and neglect and have been significantly correlated to risky health choices and behavioral problems, and later, in adulthood, it has been correlated to poor health choices, chronic physical health problems, low quality of life, and early death (Felitti et al., 2019).

The types of ACEs that have received the most notable attention are those types that are observable and easy to measure, specifically, physical and sexual abuse (McSherry, 2007). Emotional abuse and neglect are underrepresented in the research, a condition that has been referred to as the "neglect of neglect" (McSherry, 2007, p. 609).

Emotional neglect has the devastating impact of contributing to a child feeling invisible, leading to a diminished sense of self, resulting in short-term, as well as long-term impacts on the child's social and emotional development. Frequently, the most predictive way to examine emotional neglect is through adult or adolescent perceptions of their childhood experiences.

Despite the harmful effects of ACE exposure, positive adaptation and resilience can be achieved through protective factors called protective and compensatory experiences (PACEs) (Hayes-Grudo, Sheffield Morris, 2020), which can help buffer some of the impacts of ACEs. Some examples of PACEs include having felt unconditional love by someone, having at least one best friend, and having access to a reliable and trustworthy adult (Hayes-Grudo, Sheffield Morris, 2020). Of course, it is not the adverse and protective childhood experiences themselves that influence mental and physical health outcomes but rather the mechanisms linking them. One such mechanism is the foundation of attachment to a caregiver.

According to attachment theory, attachment develops with a caregiver in the early stages of a child's life and as early as infancy. The physical and emotional availability of a caregiver sends signals to the child about whether the world is a safe place. For example, does a caregiver respond to the child's need for comfort after falling off her tricycle. This is particularly important for infants who are unable to express themselves and are completely dependent on the caregiver to interpret the infant's needs. If a child's needs are unmet by the caregiver, it sets into motion a trajectory throughout the child's

life and has a significant impact on later health choices and future relationships with significant others and later, as parents (Bowlby, 1982; Bowlby, 1988). Children who have a healthy bond with their caregivers tend to develop secure attachments, whereas children who believe that caregivers are unavailable to meet their needs, form a sense that the world is an unsafe place and have a likelihood of developing attachment insecurities.

According to Bowlby (1982), attachment styles are based on internal working models that develop as a child. For instance, if a child develops a negative 'self' working model, she believes that she is undeserving of the affection of a romantic partner later in life and she may be anxious about seeking intimacy from her partner. This can lead to the development of an ambivalent adult attachment style. On the other hand, if a child develops a negative 'other' working model, others are seen as untrustworthy and underlying fears of abandonment develop. This working model can develop into a dismissive adult attachment style. When a child has a working model that is positive about the 'self' and 'others', a secure adult attachment style can evolve (Bowlby, 1973). Attachment styles are learned and can be passed from one generation to the next through concepts called reflective functioning and parental reflective functioning (PRF).

Reflective functioning, also called mentalization, is the ability to understand the feelings, thoughts, and motivations of others. Parental reflective functioning is the ability of the caregiver to grasp the meaning behind his/her own child's thoughts, feelings, behaviors, and motivations (Slade et al., 2005). It is the ability to 'hold the child's mind in mind' (Steele, Townsend & Grenyer, 2020, p.11). It is the ability for a caregiver to

recognize that a child has thoughts and feelings separate from the caregiver.

A caregiver who develops high levels of reflective functioning from her own childhood has a stronger likelihood of passing high reflective functioning onto her child. When caregivers have histories of abuse or neglect, and, or, their caregivers had low PRF, there is a strong likelihood that low levels of reflective functioning will be passed onto the children. Children raised by parents with low PRF tend to have cognitive and emotional developmental issues that later lead to poor health choices and disruptions in interpersonal relationships.

According to Luyten (2017) there are three types of parental reflective functioning: certainty of mental states (CM), pre-mentalizing of mental states (PM), and interest and curiosity about mental states (IC). Certainty of mental states and PM are impairments of PRF, while IC demonstrates higher levels of PRF. Pre-mentalizing refers to a caregiver who is overly confident in his/her ability to understand the mental and cognitive states of his/her child with little recognition of the opacity of the child's emotional states. Certainty of mental states refers to a caregiver's tendency toward concrete thinking without the ability to consider complex emotions and behaviors. Interest and curiosity refers to the caregiver's ability to recognize that his/her child's emotions can be ambiguous and they demonstrate an interest and curiosity in seeking to better understanding their child's mental and emotional states (Rostad & Whitaker, 2016).

Impairments in reflective functioning diminish a person's ability to identify and

regulate emotions and stands in the way of the individual understanding the perspectives of others. Low reflective functioning has been linked to mental and mood disorders in adulthood, e.g., antisocial personality disorder, borderline personality disorder, depression (Luyten et al., 2017), substance abuse (Pajulo et al., 2019), interpersonal deficiencies, and intimate partner violence (Quinlivan & Evans, 2005).

Attachment theory provides a helpful model for understanding intimacy and violence in romantic relationships. Individuals who have ambivalent attachment styles anxiously draw nearer to their partners during times of stress or a desire for intimacy. Individuals with dismissive attachment styles, have an inherent fear of abandonment and their way of coping with relationship anxiety is to avoid intimacy with their partners and dismiss the other's attempts to draw closer. With these juxtaposed distal relationship needs comes conflict, which can lead to emotional, verbal, sexual, and physical violence in an attempt to regulate closeness and distance in the partner relationship (Doumas et al., 2008).

Studies have demonstrated that people with attachment insecurities were more likely to abuse drugs and alcohol (Flores, 2004; Flores, 2006). Deficits in emotion regulation, a common occurrence with people who have attachment insecurities, are closely tied to substance use disorders. People with attachment insecurities may also use drugs and alcohol to compensate for alienation of the self. Substances are frequently turned to as a replacement for intimate relationships and often begin to manifest during adolescence (Ho¨fler & Kooyman, 1996).

In this dissertation, I plan to examine a sample of disadvantaged mothers of young children recruited during pregnancy. I will be using structural equation modeling for the first three models of data analyses to examine the associations between ACEs and PACEs as predictors for the three different types of parental reflective functioning (IC, CM, PM), mediated by three styles of adult attachment (ambivalent, dismissive, secure).

Because childhood neglect has been shown by the literature to be a salient ACE, I will focus on childhood neglect as a separate measure from the overall ACE score. In model four I will use structural equation modeling to analyze data on childhood neglect as a predictor for alcohol, tobacco, and other drugs (ATOD) mediated by the three adult attachment styles.

In model five I will use structural equation modeling to analyze data on childhood neglect as a predictor for intimate partner violence mediated by the three adult attachment styles

Research Questions

1. How are ACEs associated with adult attachment styles?

It is hypothesized that ACEs will be negatively associated with secure adult attachment style and positively associated with ambivalent and dismissive adult attachment styles.

2. How are PACEs associated with adult attachment styles?

It is hypothesized that PACEs will be positively associated with secure adult attachment style and negatively associated with dismissive and ambivalent adult attachment styles.

3. Does ambivalent adult attachment style mediate the association between childhood

experiences and PRF IC?

It is hypothesized that the relationship between childhood experiences and PRF IC will be mediated by ambivalent adult attachment style.

4. Does ambivalent adult attachment style mediate the association between childhood experiences and PRF CM?

It is hypothesized that the relationship between childhood experiences and PRF CM will be mediated by ambivalent adult attachment style.

5. Does ambivalent adult attachment style mediate the association between childhood experiences and PRF PM?

It is hypothesized that the relationship between childhood experiences and PRF PM will be mediated by ambivalent adult attachment style.

6. Does dismissive adult attachment style mediate the association between childhood experiences and PRF IC?

It is hypothesized that the relationship between childhood experiences and PRF IC will be mediated by dismissive adult attachment style.

7. Does dismissive adult attachment style mediate the association between childhood experiences and PRF CM?

It is hypothesized that the relationship between childhood experiences and PRF CM will be mediated by dismissive adult attachment style.

8. Does dismissive adult attachment style mediate the association between childhood experiences and PRF PM?

It is hypothesized that the relationship between childhood experiences and PRF PM will be mediated by dismissive adult attachment style.

9. Does secure adult attachment style mediate the association between childhood experiences and PRF IC?

It is hypothesized that the relationship between childhood experiences and PRF IC will be mediated by secure adult attachment style.

10. Does secure adult attachment style mediate the association between childhood experiences and PRF CM?

It is hypothesized that the relationship between childhood experiences and PRF CM will be mediated by secure adult attachment style.

11. Does secure adult attachment style mediate the association between childhood experiences and PRF PM?

It is hypothesized that the relationship between childhood experiences and PRF PM will be mediated by secure adult attachment style.

12. How is childhood neglect associated with ATOD?

It is hypothesized that childhood neglect will be positively associated with ATOD.

13. Does ASQ mediate the association between childhood neglect and ATOD?

It is hypothesized that ASQ will mediate the association between childhood neglect and ATOD.

14. How is childhood neglect associated with IPV?

It is hypothesized that childhood neglect will be positively associated with IPV.

15. Does ASQ mediate the association between childhood neglect and IPV?

It is hypothesized that ASQ will mediate the association between childhood neglect and IPV.

This dissertation will contribute to the literature in that it will be the first to examine how ACEs and PACEs predict PRF mediated by adult attachment styles. It is also the first study to examine how childhood neglect is associated with IPV and ATOD mediated by adult attachment style.

CHAPTER II

LITERATURE REVIEW

Adverse Childhood Experiences

In the U.S., approximately 61.5% of adults (Merrick et al., 2018) and 48% of children (Bethell et al., 2014) have been exposed to adverse childhood experiences (ACEs), with over 30% being exposed to multiple adversities (Bethell et al., 2014; Merrick et al., 2018). Exposure to childhood adversity and the trajectory of outcomes that come with it are among the costliest lifetime public health expenditures – totaling on average, approximately $210,012 per victim (Fang, et al., 2012). Some examples of the numerous expenses include short-term and long-term healthcare costs, productivity losses, child welfare, criminal justice, and special education (Fang et al., 2012). Adverse childhood experiences have been significantly associated with risky behaviors, chronic physical and behavioral problems, juvenile delinquency and adult criminality (Fang & Corso, 2007; Widom & Maxfield, 1996), mental health disorders, e.g., posttraumatic disorder (Browne & Finkelhor, 1986), disability due to physical injuries (Dominguez, Chalom, & Costarino, 2001), and low quality of life (Felitti et al., 2019).

Dr. Felitti's work with ACEs (Felitti et al., 1998) has received an outpouring of interest among scientists, educators, policy makers and others in terms of the effects of ACEs and their long-term impact across the lifespan. Exposure to ACEs has been well

researched in terms of its impact on childhood and adulthood outcomes. Particularly notable is the link between ACEs and adult mental health outcomes, including depression (Lehman, Taylor, Kiefe, & Seeman, 2009; Chapman et al, 2004) adult relationship health, and physical health (Bethell et al., 2019). Childhood adversity is estimated to be responsible for 32% of the risk factors for psychopathology in adolescents (Dhondt, Healy, Clarke, & Cannon, 2019). The aftermath of childhood adversity not only causes adverse consequences during childhood, but also has poor trajectory outcomes well into adulthood, with outcomes including increased morbidity and mortality rates in adulthood (Masten & Cicchetti, 2010) and early death (Petruccelli, Davis, & Berman, 2019). Childhood adversity has been linked to incidents of later intimate partner violence (IPV) (Linder & Collins, 2005; Widom, Czaja, Dutton, 2014) and substance use (Felitti et al., 2019). Those who experienced more childhood adversity were also more likely to engage in poor health behaviors such as smoking and heavy or binge drinking (Breiding, Basile, Smith, Black, & Mahendra, 2015; Breiding, Black, & Ryan, 2005). Youth who are at risk and, or, who are engaged in the juvenile detention system are disproportionately exposed to ACEs and those exposures contribute to ongoing offending through young and middle adulthood (Craig, Piquero, Farrington, & Ttofi, 2017).

The most common form of child maltreatment is neglect, which accounts for over 75% of all cases reported to child protective services (Child Welfare Information Gateway, 2018). Nevertheless, many studies fail to make a distinction between abuse and neglect and neglect is frequently referred to as the "neglect of neglect" (McSherry, 2007,

p. 609). Abuse carries with it a definition of the commission of an act, while neglect is the omission of caregiving behaviors (Mennen et al., 2010; Sedlak et al., 2010) – making it difficult to tease apart the differences between emotional abuse and emotional neglect.

Childhood Neglect

While childhood neglect accounts for the majority of U.S. child maltreatment cases, less is known about this type of abuse than physical or sexual because it is less understood and difficult to identify, measure, prevent, and treat. Childhood neglect is frequently defined as the caregiver's failure to provide adequate shelter, food, medical care, or clothing, to the point of jeopardizing the child's safety, health, and well-being (Child Welfare Information Gateway, 2018). Each of the 50 states has its own definitions of child abuse and neglect but they are all guided by the standards set forth by federal law. The "Child Abuse Prevention and Treatment Act (CAPTA) defines child abuse and neglect as, at a minimum, 'any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm.'" (U.S. Department of Health & Human Services, 2021, p. ix). The five categories that are most commonly recognized by the U.S. include: physical neglect (abandonment, neglect of basic care); medical neglect (healthcare needs delayed or denied); inadequate supervision (child left unsupervised, failure to adequately protect from safety hazards); emotional neglect (isolation, failure to provide emotional support or affection); exposing child to intimate partner violence or substance use; educational neglect (failure to enroll a

child in school, failure to comply with educational needs) (Child Welfare Information Gateway, 2018).

Childhood emotional neglect has been identified as a risk factor for other internalizing disorders, particularly depression (Norman et al. 2012; Widom, DuMont, & Czaja, 2007). Researchers are beginning to examine the deleterious effects of the subtypes of neglect; physical and emotional. Physical neglect has been found to be linked to greater risk for externalizing symptoms during childhood (Hildyard & Wolfe, 2002; Kim & Ciccetti, 2002) such as behavior problems, while emotional neglect has been found to have unique risks for internalizing symptoms among clinical populations and community research participants (Hildyard & Wolfe, 2006).

Childhood neglect and childhood emotional neglect are two distinct forms of maltreatment. Childhood emotional neglect can be defined as behaviors by a caregiver characterized by failing to participate in behavior needed to meet the developmental needs of a child (Child Welfare Information Gateway, 2018). While emotional abuse is the intentional act of a caregiver that has the likelihood of inflicting emotional harm on a child, it is distinct from emotional neglect in that neglect is the failure to meet emotional and social needs of the child (Straus et al., 1995). Emotional neglect detection presents a significant challenge, as it is not as well defined as physical and sexual abuse. But some researchers maintain that neglect can have more devastating short-term and long-term impacts on emotional and social development and may be best measured and understood in the context of adult perceptions of their neglectful experiences as children (Bowlby,

1982). Although emotional abuse may lead to poor outcomes for a child, the child does receive attention, which is potentially less damaging than emotional neglect (Straus et al., 1995). Children who grow up in an environment where they are exposed to emotional neglect are characterized by a sense of invisibility and a diminished sense of self (Talmon et al., 2019). Childhood emotional neglect may include denial, failure, or unfulfillment of a caregiver to provide for the child's need for love, a sense of belonging, encouragement, and emotional support (Talmon, Horovitz, Shabat, Haramati, & Ginzburg, 2019) which is needed to meet the developmental needs of a child (Straus, Kinard, & Williams, 1995). A fundamental human need is to be seen and loved and to be in an environment that nurtures a sense of security, resulting in a secure and well-defined sense of self and a belief that one is valued. Environments that are lacking these essential qualities can result in long-term negative outcomes, including risks of intergenerational transmission of neglect (Talmon et al., 2019). Children whose emotional needs for support and love are not met have the potential for developing the most significant risk for social and psychological problems (Bowlby, 1982). Childhood emotional neglect can disrupt the child's capacity to form secure attachment to a caregiver, resulting in insecure attachment in adulthood (Widom et al., 2014).

Protective and Compensatory Experiences

Despite the negative outcomes of ACE's, positive adaptation and resilience can be achieved through protective factors, or protective and compensatory experiences (Hays-Grudo & Sheffield Morris, 2020). Child development researchers have studied the

impact of protective experiences that are associated with early attachment, parenting, family health, peer relationships, school and community (Bethell et al., 2019). Studies have shown that adversity and protective factors play a significant role in health outcomes and brain development throughout a person's life (Lamb & Lerner, 2015; Masten & Barnes, 2018). Pathways to resilience can be complicated, involving the co-occurrence of biological, psychological, environmental, family, community, as well as the timing of adversity and compensatory events. According to Meng (2018) the developmental age of a person plays a significant role because some protective factors become more distal and less important, while other proximal protections become more important. The developmental age that adversity occurs is important to consider as well. Meng (2018) found that earlier exposure to adversity required greater protective factors from the environment. Protective factors have the capacity to mitigate the response a person has to adversity (Ciccheeti, 1995; Afifi & MacMillan, 2011). Researchers are beginning to explore the importance of dose response when examining the co-occurrence of protective factors and ACEs. In a retrospective preliminary three-wave population-based study, Sheikh (2018) found that childhood friendships have potential buffering effects for children who had been mistreated. Bethell (2019) studied Wisconsin adults and found that when ACEs and protective factors were considered in the same model that the protective factors had a significant buffering effect on adult mental health. Zhang (2021) found that protective factors related to social support had higher buffering effects on psychopathology among adolescents with a history of chronic childhood adversity

when compared to the buffering effects of socioeconomic related protections, e.g., parental education and socioeconomic status. Resnick (2000) found that the presence of at least one dependable and caring adult who valued, recognized, and rewarded positive behaviors, served as a protective factor of "quietly disturbed" and "acting out" behaviors in troubled youth.

Mothers who were abused as children who reported having had some sort of emotional support from a non-abusive adult were not as likely to repeat cycles of abuse with their own children (Egeland Jacobvitz, & Sroufe, 1988). Social support had beneficial outcomes for families who were at-risk after stressful life events and who were also vulnerable for child maltreatment (Kotch et al., 1997). Children who were in foster care who had extrafamilial mentors reported experiencing fewer depressive and anxiety problems and had improved life satisfaction when compared to children without mentors (Munson & McMillon, 2009). There are indicators that protective factors could buffer some of the effects of childhood maltreatment, such as extrafamilial support (Heller, Larrieu, D'Imperio, & Boris, 1999), close sibling relationships, and, or involvement in team sports (Kruttschnitt, Ward, & Sheble, 1987). Neighborhood advantage had positive impacts on the relationship between cognitive capacity and resilience in children who were abused or neglected (DuMont, Widom, & Czaja, 2007). A sense of feeling connected to an adult has been shown to be a particularly salient protective factor to a youth's positive development and this connectedness is further heightened when opportunities for competencies such as prosocial skills development help improve a sense

of self-motivation and confidence (Resnick, 2000).

Research has shown that there are protective factors that can help children develop self-efficacy, particularly when there is an adult in the child's life that the child is able to feel acceptance and unconditional love. While these relationships may not be able to run back the hands of time, they can have a buffering effect on perceptions that one is unlovable. Protective factors can have an impactful effect on internal working models and can serve as an impetus to improved interpersonal functioning as adults.

Attachment Theory and Adult Attachment Styles

Attachment theory (Bowlby, 1988) provides a theoretical model that explains the impact of childhood adversity for long-term impacts on adult interpersonal functioning outcomes (Bonache, Gonzalez-Mendez, & Krahe, 2019). According to Bowlby (1982) attachment develops early in a child's life with the parent or primary caregiver. The early attachment to the caregiver during childhood creates a lifelong set of traits, or attachment styles, that have been examined in adults (Bartholomew & Horowitz, 1991). When children grow up with a caregiver who is consistently available, attentive, and predictable, they are more likely to develop a secure attachment to the caregiver, whereas children who grow up with a caregiver who is inattentive, or who is physically or emotionally unavailable, are more likely to develop attachment insecurities (Bowlby, 1988). The child's expectations of the caregiver's availability influence the establishment of internal working models that influence relationships into adulthood (Bowlby, 1988; Bretherton, 1992). The working models become internal representations of caregiver

support that are cognitive-affective structures that become the "blueprints" for future interpersonal relationships (Fearon, Bakermans-Kranenburg, van Ijzendoorn, Laplsey, & Roisman, 2010). Adults with negative internal models of the self, feel undeserving and unworthy of support from others, which develops into attachment anxiety, and they often seek partners with abusive characteristics (Murphy, Elklit, & Shevlin, 2020). Whereas, adults who have negative internal models of others frequently develop attachment avoidance. Attachment avoidence is characterized by avoiding closeness to others due to underlying fears of abandonment and a belief that others will not be consistently available to meet their needs for support and attachment (Bartholomew, 1990; Surcinelli, Rossi, Montebarocci, & Baldaro, 2010).

A central assumption of attachment theory maintains that attachment insecurities that develop because of childhood maltreatment can have an impact across the lifespan (Nelson et al., 2009) and plays a central role in all life stages (Bowlby, 1982). To ensure safety and survival, children seek proximity to a caregiver and during adolescence and adulthood, when feeling stressed or threatened, proximity is sought with intimate relationships (Bifulco & Thomas, 2012). Adolescents and adults who have a secure attachment foundation are characterized as having high self-esteem and tend to enjoy intimate relationships, seeking out comfort and social support whenever needed (Feeney & Noller, 1991). On the other hand, people who develop ambivalent attachment styles desire proximity in intimate relationships but worry that the feelings of closeness will not be reciprocated by others; those who are dismissive, are unable or unwilling to engage

and share their thoughts and feelings in intimate relationships (Feeney & Noller, 1991; Schimmenti & Bifulco, 2015). Ambivalent attachment styles have been found to be directly linked to anxiety disorders, social phobias, (Bar-Haim, Dan, Eshel, & Safi-Schwartz, 2007) and panic disorders (Marazziti et al., 2007) across cultures and across age groups (Schimmenti & Bifulco, 2015).

Pregnancy is a time when the mother's sense of attachment to the fetus begins to form. The process of attachment is influenced by the woman's sense of herself and others – a positive sense of self and others is associated with secure attachment (van IJzendoorn, 1994). Women who have been exposed to childhood emotional neglect may have a negative sense of her child (Christie et al., 2017) and a negative sense of herself (Wright, Crawford, & Del Castillo, 2009) and may find attachment to the fetus challenging (Talmon et al., 2019). Research has shown that women who experienced childhood neglect and who did not get their emotional needs met, found it difficult to meet the needs of their infants, which may in turn lead to feelings of resentment toward the infant (Trad, 1991).

Parental Reflective Functioning

In 1975, theorists began the discussion about the challenges that adults face once they become parents and how their parenting is most likely impacted by their childhood histories of abuse and trauma (Fraiberg, Adelson, & Shairo, 1974). Fraiberg et al., (1974) conceptualized that there is a presence, or a "ghost" left behind by trauma, whereas Fonagy et al., (1993) claimed that it was not the presence of something, but the absence

of reflective functioning. Reflective functioning is a central process of resilience for those who have abuse and neglect histories (Berthelot, Ensink, & Normandin, 2015; Fonagy, Gergely, Jurist, & Target, 2002). Reflective functioning is the psychological process that underlies the ability to comprehend, understand, and predict the mental states of the self and others in terms of beliefs, desires, and intentions (Pajulo et al., 2012). Disruptions in the attachment relationship due to abuse or deprivation are associated with later impairment in reflective functioning (Berthelot et al., 2015; Borelli, West, Decoste & Suchman, 2012; Fonagy & Bateman, 2016). The concept of reflective functioning is rooted in object relations and attachment theory (Pajulo et al., 2015) and develops within the context of the caregiver's own prior caregiver attachment relationships.

While studying mothers and their infants, Fonagy, (1994) found a link between a mother's capacity to mentalize in relation to her earlier attachment representations and her attachment to her infant. In a seminal study, Fonagy (2005) discovered that mothers with abuse and neglect histories, who had high levels of mentalization had securely attached infants compared to mothers with low levels of mentalization who had insecurely attached infants. Parental reflective functioning (PRF) refers to the caregiver's capacity to adequately identify and respond to their child's needs, which demonstrates to the child that the caregiver is available to consistently meet his/her needs (Borelli et al., 2012). Parental reflective functioning is the caregiver's ability to reflect upon and discern their child's experiences and mental/affective states independent of the caregiver's own internal cognitive/affective states (Fonagy & Bateman, 2016; Kolomeyer et al., 2016).

The responsiveness of the caregiver determines the development of PRF capacity, which is central to navigating parental relationships (Fonagy & Target, 2006). Parents with high PRF can better understand the behaviors of their child regarding mental states and the behavior of the child has meaning and predictability (Slade, 2005). For example, when a child cries, the parent is not confounded as to why the child cries, but rather observes this as a signal that the child needs something, e.g., comfort or reassurance (Rostat & Whitaker, 2016). The parent's understanding of the underlying motivations for the child's behavior contributes to a higher quality and more satisfying parent-child relationship which is a significant predictor of attachment security (Rostat & Whitaker, 2016). Attachment theorists began focusing on the concept of reflective functioning and how the child's relationship with the caregiver imparts its influence on the attachment of the child and its influence on the cognitive and social development of the child (Fonagy, 1991). A caregiver's internal working model contributes to the emerging attachment developed by the child (George & Solomon, 1996; van IJzendoorn, 1995). Reflective functioning underlies caregiver sensitivity – it guides understanding of the child's emotional and cognitive needs (Rostadt &Whitaker, 2016). Caregiver sensitivity, does not in and of itself, explain the attachment that occurs between caregiver and child (Sharp & Fonagy, 2008). As such, it is the caregiver's internal working model that serves as the guide to interpreting and responding to the child's needs (Main, 1990). A caregiver who is securely attached can respond with sensitivity to her child's need for comfort and proximity, whereas a caregiver who is insecurely attached tends to reject or fail to adapt

to the proximity needs of her child (Slade et al., 2005). A caregiver who is traumatized or mistuned and has an internal state of distress, communicates to the child that the world is unsafe, which develops in the child, a sense of disorientation and confusion (Macintosh, 2013). Secure attachment is fundamental in establishing the foundation for mentalizing, which includes emotion regulation, insight, and empathy for others (Allen, Fonagy, & Batement, 2008). A caregiver's capacity for good reflective functioning or being able to 'hold the child's mind in mind' which facilitates a safe environment for the child to explore and develop the ability to regulate their own emotions, desires, and intentions (Soderstrom & Skarderud, 2009).

Even though PRF is rooted in early childhood experiences, interventions have proven helpful when reflective capacities were targeted among high-risk parenting groups (Pajulo et al., 2012). Mothers with histories of abuse and trauma, but who have managed to have healthy relationships in later life, were able to demonstrate high PRF and tended to have children who were securely attached when compared to mothers who had low PRF and had children who were insecurely attached (Fonagy, Steele, & Steele, 1991).

There are three categories of PRF, two of which exhibits low PRF and one that exhibits high PRF. According to Krink (2018), pre-mentalizing PRF refers to a caregiver who tends to be overly assured about the child's subjective mental state. The caregiver is unable to understand the child's internal subjective experiences and frequently attributes malevolent motives to the child's behavior, e.g., "My child cries to embarrass me" "My child gets sick to keep me home from work". Certainty of mental states PRF refers to a

caregiver who is unable to understand that a child's emotions are not transparent. For example, "I always know what my child is feeling" "I always know why my child acts the way she does". Interest and curiosity PRF refers to a caregiver who is interested in learning more about their child's internal cognitive and emotional experiences. The caregiver demonstrates some modesty about always knowing one's own emotional and cognitive states and recognizes that s/he does not always fully understand their child's emotions or intentions. For instance, the caregiver might say, "I am curious to find out why my son behaves that way" "I try to see the world through my child's eyes". A parent or caregiver with high IC understands that the cognitive and emotional states of the child are not opaque. The caregiver is interested and curious about the internal experiences of the child – something that insecurely attached caregivers with low PRF do not appear to possess (Krink et al., 2018; Fonagy & Bateman, 2016; Luyten et al., 2017).

Intimate Partner Violence

The National Intimate Partner and Sexual Violence Survey (NIPSV) (Smith et al., 2018) estimates that approximately 18.3% of women have experienced sexual violence and 30.6% experienced physical violence at the hands of an intimate partner during the 12 months before their survey was administered. Over one third of women, or 36.4% (43.5 million) reported experiencing psychological aggression by an intimate partner during her lifetime (NIPSV, 2018). Outcomes for IPV not only have immediate health outcomes but can also have a lifelong impact. Victims of IPV are more likely to experience acute and chronic poor mental and physical outcomes such as smoking, heavy

or binge drinking, HIV and other unhealthy behaviors (Breiding, Basile, Smith, Black, & Mahendra, 2015; Breiding, Black, & Ryan, 2005).

Adverse childhood experiences have been linked to incidents of later IPV (Linder & Collins, 2005; Widom, Czaja, Dutton, 2014). Specifically, self-reported neglect during childhood among adult populations has been linked to a bigger number of episodes of violent behavior (Chapple & Vaske, 2010; Mersky et al., 2009). Studies found that childhood neglect was the most significant predictor of IPV in adulthood, surpassing incidents of reported physical or sexual abuse (Widom, et al., 2014).

Even though researchers have shown that parental physical abuse has been associated with IPV, the vast majority of children victimized by their parents fail to become aggressive with their intimate partners (Kaufman & Zigler, 1993). Social learning models of aggression imitation do not adequately explain IPV datasets and a more pervasive process has been identified in insecure attachment in children of abusive parents (Dutton, 1999; Dutton, 2000). While physical abuse indicates an unstable family base (Dutton, 1995), more profound cognitive and emotional mechanisms, such as shaming and rejection, demonstrated higher incidents of intergenerational transmission than physical abuse by itself, indicating parental rejection as the most significant predictor (Dutton, 1994). According to Dutton (1995), parental shaming and rejection was the most significant predictor of IPV. Dutton claimed that "intergenerational transmission rates increase when the emotional processes of shaming and rejection were added to the experience of physical abuse. The main contributor to a discriminant

function for adult IPV perpetration was paternal rejection, not exposure to physical child abuse." (Dutton & White, 2012, p. 478). Baring these in mind, attachment theory is an excellent fit for improving understanding of the impact of childhood emotional neglect and its long-term outcomes on adult intimate relatedness, in particularly, how it is linked to IPV. Couples who have juxtaposed intimacy and proximal needs are at an elevated risk for struggles, and as research has shown, they are at an elevated risk for IPV (Widom et al, 2014).

Often women with attachment insecurities perceive IPV as consistent with their negative internal working model, which may have a component of continuity that furthers her perceptions of low self-worth (Smagur, Bogat, & Levendosky, 2017). Whenever a threat to her attachment figure is perceived, anxiety increases and the outcome can be an endeavor to preserve attachment in the relationship, which can result in increased threats of IPV, particularly when paired with a partner who has an avoidant style of attachment (Doumas et al., 2008; Bowlby, 1984). These conflicting needs for emotional space in the relationship could precipitate IPV to manage conflict (Pistole, 1994). In other words, individuals with elevated levels of anxious/ambivalent attachment could react to attempts for attachment from their intimate partner with proximity-seeking behaviors, while individuals with elevated levels of attachment avoidance could respond with distance-seeking behaviors when faced with attempts for attachment (Doumas, et al., 2008). Studies have shown that there is a connection between anxiety about being abandoned by an intimate partner and the partner's anxiety over intimacy as a predictor for violence in

both men and women (Roberts & Noller, 1998. This is indicative of IPV being connected to attachment related proximal conflicts (Pistole, 1994), along with demand and withdrawal patterns (Berns, Jacobson, & Gottman, 1999; Holtzworth-Munroe, Smutzler, & Stuart, 1998). The closeness and assurance needs of female partners who are anxious, along with the distal and emotional detachment of avoidant males may contribute to violent behavior (Doumas et al., 2008).

Substance Use

In 2008 8.5% of U.S. adults met the criteria for alcohol disorders, 2% met the criteria for a drug abuse disorder and 1.1% met the criteria for both (Falk et al., 2008). For each state and federal dollar spent, 96 cents will go toward illness, crime, and social afflictions, and only 2 cents is used for prevention and treatment (CASA, 2021). Addiction and substance abuse related ills cost the U.S. at least $467.7 billion in 2005. Ninety-five percent of that money went toward picking up the pieces of the consequences of addiction and substance use, e.g., juvenile justice, incarceration, while only 1.9% went toward prevention and treatment, which demonstrates, to say the least, a questionable way of allocation of funds in the U.S. (CASA, 2021).

The cost for substance abuse costs the U.S. over $600 billion each year (National Institute on Drug Abuse, 2018). This is a substantially higher amount than other countries, e.g. the United Kingdom's annual expense for drug and alcohol addiction in 2017 was $26 billion (UK Addiction Treatment Centres, 2018) and Canada spent $46 billion in 2017 (Corace et al., 2021). These costs include but are not limited to lost work

productivity, healthcare costs, criminal justice, and other drug related crimes (National Institute on Drug Abuse, 2018).

Substance use treatment has been shown to reduce health and social related costs significantly in a much more cost-effective way. For instance, one year of methadone maintenance treatment cost approximately $4,700 per patient compared to the annual incarceration cost, which is $24,000 per person (National Institute on Drug Abuse, 2018). Conservative estimates yield a savings of 12 to 1 ratio when examining the total costs the U.S. spends on incarceration, theft, drug related crimes, as a result of substance use when examined side by side with substance use treatment (NIDA, 2018).

In 2003, it was estimated that prevalence of tobacco use among pregnant women range from 12% to 25% (Cnattingius, 2004; Colman & Joyce, 2003). When compared to African American and Hispanic women, prevalence rates are highest among younger white women who have lower incomes and education levels and higher parity (McLafferty et al., 2016). Women who experience depression have more of a tendency to smoke while pregnant (Blalock et al., 2005). Tobacco use has been associated with increased risk of ectopic pregnancy, preterm and low weight birth, stillbirth, small for gestational age, congenital anomalies, (Banderali et al., 2015) and poor fetal neurodevelopment (Herman et al., 2008). Smoking while pregnant can cause damage to the infant's DNA which could lead to chromosome instability (Kareli et al., 2014).

In the 1970's, Khantzian and David Duncan co-founded a theory called Self-Medication Hypothesis (SMH). Duncan and Khantzian maintain that addiction is a

process of self-medication due to a person's inability to tolerate or understand his/her emotions (Khantzian, 1997). According to SMH, addiction is not a matter of pleasure seeking, but is rather an attempt to self-regulate emotions and compensate for a sense of alienation from others (Khantzian, 2011). The person acts as if close interpersonal relationships are unwanted (Khantzian, 2012) but this disengagement from others and alienation from the self results in distress and causes further dependence on substances (Khantzian, 2011). According to Ho¨fler and Kooyman(1996), substance use becomes the focus of attachment instead of interpersonal relationships. They refer to this as 'substances-as-relationships' and it develops because of attachment disruptions during childhood – the addictive behavior manifests itself during adolescence (Ho¨fler & Kooyman, 1996). Flores expanded this concept and called addiction an attachment disorder (Flores, 2004; Flores, 2006). The addictive substance becomes the means for self-soothing during times of stress and develops into an attachment and takes the place of interpersonal relationships (Flores, 2006).

Alcohol and drugs have the capacity to trick a person into believing they have a secure base and are a misguided effort to repair the self (Flores, 2004; Schindler et al., 2005). Substance use becomes a seemingly, but deceptive protective solution with consequences of impairing a person's ability to form healthy interpersonal relationships (Fletcher et al., 2015). Individuals with attachment trauma, which is any rupture with the caregiver relationship such as abuse, neglect, or loss, may use alcohol or drugs and avoid intimate relationships in an attempt to cope with negative memories (Feld, 2004;

MacIntosh & Johnson, 2008; Fletcher et al., 2015).

CHAPTER III

METHODOLOGICAL APPROACH

Sample Description

Data for this study come from a prospective sample of pregnant women (n=177) and aged 16-39 (mean = 25, SD = 5.5). Participants were recruited from 2017-2018 from two prenatal community clinics that serve patients who are predominately low income, and the longitudinal study consists of nine survey waves. This study used data from assessment waves one, six, and eight. Participants were screened for eligibility to participate based on being 15 years old and less than 28 weeks pregnant. The clinics were in a South-Central urban U.S. city. The locations of the clinics make it possible to serve a large majority of low-income patients who are on public insurance. The clinic providers include physicians, nurses, and nurse midwives, and they serve at all hospitals in the city. The sample included 177 participants with data that included ACEs that was collected on the patients' first prenatal visit. Study attrition was greatest between the first and second trimester. Written informed consent was obtained from all participants or from their parent or legal guardian if they were younger than 18, as well as participant assent. Surveys were conducted in English.

Measures

Adverse childhood experiences were measured with the Adverse Childhood

Experiences Questionnaire (ACEs) (Fellitti et al., 1998). Items were coded as a sum of 10 items for childhood adversity and were included in assessment one. Questions included items about physical and emotional abuse and neglect, as well as household dysfunction before the age of 18. Scores ranged from 0 to 10 with a 0-score indicated for no ACEs. Examples of questions from the ACE measure include, “Did an adult or person at least 5 years older than you ever have you touch their body in a sexual way?” and “Did you often feel that you didn’t have enough to eat?”. Internal consistency was .81.

Positive childhood experiences were measured using the Protective and Compensatory Experiences measure (PACEs) (Morris et al., 2018). PACEs were administered in assessment one. This scale includes 10 items with responses being “yes” or “no” and with scores that ranged from 0 to 10 with a 0-score indicated for no PACEs and includes experiences that occurred before the age of 18. The PACEs questionnaire examines factors that serve as buffers to the negative impacts of exposure to early adversity, trauma, and neglect (Morris et a., 2018). Some examples of the questions on the PACE questionnaire include, “Did you have someone who loved you unconditionally (you did not doubt that they cared about you?)” and “Was there an adult (not your parent) you trusted and could count on when you needed help or advice (e.g., coach, teacher, minister, neighbor, relative)?”. Cronbach’s alpha was .86.

Adult attachment style was measured with the Attachment Styles Questionnaire (ASQ) (Oudenhoven et al., 2003; Mosterman & Hofstra, 2015). The questionnaire measures general adult attachment to other individual adults and was administered in

assessment six. The questionnaire includes 22 items with responses being measured on a 5-point Likert scale with 1=totally disagree and 5=totally agree. Adult attachment was measured in assessment eight. The adult attachment categories include three attachment styles: secure adult attachment, “I feel at ease in emotional relationships”; ambivalent adult attachment, “I often wonder if people like me”; dismissive adult attachment, “I don’t worry about being alone, I don’t need other people that strongly”. Cronbach’s alpha for secure attachment was .75, dismissive was .56, and ambivalent was .86.

Parental reflective functioning was measured with the Parental Reflective Functioning Questionnaire (PRFQ-18) (Luyten et al., 2009). The PRFQ-18 is an 18-item measure in which caregivers respond to various statements regarding the degree to which they are able or are unable to identify the opaqueness of internal mental states and struggles in relating to their children (Rostad & Whitney, 2016). It uses a 7-point Likert scale and is rated from lowest to highest – 1 = strongly disagree and 7 = strongly agree. Parental reflective functioning was measured in assessment eight. The PRFQ consists of three subscales: interest and curiosity in mental states (IC), certainty of mental states (CM), and pre- or non-mentalizing modes (PM) (defense or denial of mental states) (Rostad & Whitney, 2016). IC measures items 3, 6, 9, 12, 15, and 18; CM measures items 2, 5, 8, 11, 14, and 17; PM measures items 1,4,7,10, 13, and 16.

The coding was provided by the authors of the measure with some items reverse coded for accuracy of the variable measure and to correct for any social desirability. Caregivers who exhibited tolerance for simulated infant distress scored higher on the IC

subscale, while caregivers who struggled with identifying and comprehending their child's mental states and who had low distress tolerance scored higher on the PM subscale (Rostad & Whitney, 2016). An example of a PRF IC question is, "I like to think of the reasons behind the way my child behaves and feels". An example of a PRF PM question is, "When my child is fussy he or she does that just to annoy me". Parents who scored high on PRFQ CM, certainty of mental states, are characterized by hypermentalization – or being overly certain of the accuracy of their assessment of the internal states of others (Fonagy et al., 2016). An example of a question that examines PRF CM is, "I always know what my child wants." Parents who scored high on the PM scale also reported less communication and less satisfaction in their role as parents and were less attuned to their child's needs (Rostad & Whitaker, 2016; Slade, 2005) and are characterized by hypomentalization – or lacking any mentalization (Luyten et al., 2017). The range for PRF IC was 2-7, PRF CM was 2-7, and PRF PM was 1-4.167. Cronbach's alpha for PRF IC was .77, PRF CM was .73, and PRF PM was .59 (Luyten et al., 2017).

Childhood neglect was measured in assessment one by using the ACEs questionnaire that measures neglect (Felitti et al., 1998). The two ACEs questions that measure neglect were expanded to include 7 questions to examine any sign of neglect which resulted in a binary neglect variable with "yes" and "no" responses; four items measured physical neglect, e.g., such as, "You didn't have enough to eat?", and three items measured emotional neglect, e.g., "No one in your family loved you". "Yes" responses to any of the items were coded 1 and "no" to all items were coded 0. Items in

the original data set were measured at three different time points, e.g., 05 years old, 6-12 years old, and 13-18 years old. The childhood neglect for this study did not break down the ages, but rather considered all ages at once. A dichotomous variable was created to capture any type of neglect at any point in time during childhood.

Interpersonal Violence was measured with four questions taken from the Pregnancy Risk Assessment Monitoring System (PRAMS) (CDC, 1987) administered in assessment six. The four items were asked for three different time points. The items were worded, “In the 12 months prior to your pregnancy, did any of the following things happen to you?”, “During your pregnancy, did any of the following things happen to you?”, and “Since you had your baby, have any of the following things happened to you?” This study examined all time points of IPV. Some examples of the items asked were, “My husband or partner threatened me or made me feel unsafe in some way” and “My husband or partner forced me to take part in touching or any sexual activity when I did not want to.” Items were coded 1 for any “yes” response and 0 for all “no” responses at any time point (Cronbach’s alpha = 0.732) (Testa & Jackson, 2021). A dichotomous variable was created to capture any form of interpersonal violence and the internal consistency was .89 and were 18 items in total.

ATOD is alcohol, tobacco, and other drugs, which was measured with four yes/no response questions, “Do you currently smoke cigarettes?”, “Do you currently use vapes or electronic cigarettes?”, “Do you currently use marijuana?”, and “Do you currently drink alcohol?”. Participant “no” responses to all items was coded 0 and “yes” response

to any item was coded 1. Internal consistency was .50.

Control variables were measured in assessment one and included age, economic hardship, and parity. Age was used as a proxy variable for maturity to control for potential fluctuations in adult attachment styles. Economic hardship was used as a control because of its influence on outcomes such as substance use behaviors (Wahler & Otis, 2014) and intimate partner violence (Renzetti, 2009), as well as its predictive value on childhood adversity (Braveman et al., 2017). Parity was a proxy variable for maturity and its potential influence on adult attachment styles.

Economic hardship was measured with 7 items. Examples of the questions included, “In the past year, did any of the following happen to you or members of your household because of a shortage of money: Could not pay the mortgage or rent on time” and “In the past year, did any of the following happen to you or members of your household because of a shortage of money: Went without meals?”. Responses to the items included “yes”, “no”, and “I don’t know”. “I don’t know” responses were coded as missing data, “yes” responses to any of the items was coded 1 and “no” to all items was coded 0. Internal consistency was .81. Parity was a proxy variable intended to capture parental experience. Parity was measured with two questions. The first question was “How many times have you been pregnant all together (including this pregnancy)?” The range was “1” through “6 or more”. Responses of 1 were coded 0 and responses 2 through 6 or more were coded 1. The second question was “Is this your first pregnancy, or have you been pregnant before?” with a response “yes” or “no”.

Analytic Approach

A total of five models was run for the analyses. The first three models were a series of structural equation models (SEM). Stata was used to examine the pathways of associations between adverse childhood experiences, positive childhood experiences, adult attachment style and parental reflective functioning. The three models examined whether there was mediation of adult attachment style on parental reflective functioning.

Models one through three examined the mediation pathways of the predictors ACEs and PACEs, with the three adult attachment styles' (ambivalent, dismissive, and secure) mediation effects on three categories of parental reflective functioning (interest and curiosity (IC), certainty of mental states (CM), and pre- or non-mentalizing modes (PM)).

Models four and five were structural equation models that examined the pathways of childhood neglect and PACEs on outcomes. Model four examined ATOD and model five examined interpersonal violence before, during, and after pregnancy. Because neglect, ATOD, and interpersonal violence are coded as categorical variables, the SEM was performed on MPlus software designed to analyze dichotomous variables. All five models controlled for age, economic hardship, and parity. Missing data was handled through full information maximum likelihood (FIML) which is an estimation of data parameters that enabled the use of all data.

CHAPTER IV

RESULTS

Across eight assessments that took place from 2017 through 2020. In assessment one, there was a total of 125 (71%) participants who answered the ACEs questionnaire. Of the 177 participants, 159 (89%) answered the PACEs questionnaire in assessment one; 96 (54%) responded to the Adult Attachment Style Questionnaire in assessment six; and 108 (61%) responded to the Parental Reflective Functioning Questionnaire in assessment eight. ATOD was measured in assessment eight and there were 96 (54%) observations. Intimate partner violence was measured in assessment six and there were 126 (71%) observations. All the control variables; age, economic hardship, and parity, were measured in assessment one.

Table 1 represents the descriptive statistics for ACEs and PACEs, on parental reflective functioning (PRF), mediated by adult attachment style (ASQ). The mean age of participants was 25.16 years old, with a range of 16 to 38 years of age (SD=5.54). The ACEs mean was 1.83 with a range of 0-9 (SD= 2.25). The PACEs mean was 7.07 with a range of 0 to 10 (SD= 2.93). Secure adult attachment style had a mean of 3.98, with a range of 1.88 to 6.00 (SD= .83). The mean for ambivalent adult attachment style was 3.27, with a range of 1.00 to 5.50 (SD= 1.03). Dismissive adult attachment style had a mean of 4.38 with a range of 1.00 to 6.00 (SD= .81). Parental reflective functioning

interest and curiosity had a mean of 5.50 and a range of 2 to 7 (SD= 1.15); parental reflective functioning certainty about mental states had a mean of 4.58 and a range of 2 to 7 (SD=1.13); parental reflective functioning pre-mentalizing modes had a mean of 1.55 with a range of 1 to 4.17 (SD=.69). Economic hardship, which was measured with seven questions had a mean of .56 with a range of 0 to 1 (SD=.50).

Table 2 represents the correlation statistics that were conducted using an alpha .05. ACEs and PACEs were positively and significantly correlated (.01); parental reflective functioning certainty of mental states was significantly correlated with ACEs (-.04), PACEs (.04), and secure adult attachment style (.03); parental reflective functioning pre- or non-mentalizing modes was correlated with ambivalent adult attachment style (.04), age was significantly associated with PACEs (-.03) and PRFQ PM (.01); parity was significantly associated with ACEs .03, PRFQ CM (.04), and PRFQ PM (.03).

Table 1
Descriptive statistics for ACEs, PACEs, adult attachment styles, all PRF, and controls

Variable	Obs	Mean	SD	Min	Max
ACEs	125	1.83	2.25	0.00	9.00
PACEs	159	7.07	2.93	0.00	10.00
Ambivalent	96	3.27	1.03	1.00	5.50
Dismissive	96	4.38	0.81	1.00	6.00
Secure	96	3.98	0.83	1.88	6.00
PRFQ IC	108	5.50	1.15	2.00	7.00
PRFQ CM	108	4.58	1.13	2.00	7.00

Table 1 cont.

PRFQ PM	108	1.55	0.69	1.00	4.17
Age |	176	25.03	5.50	16.00	38.00
Econ Hard	158	0.56	0.50	0.00	1.00
Parity	171	2.22	.94	1.00	4.00

Table 2
Correlation statistics for ACES, PACES, adult attachment styles, and PRF

Variable	ACES	PACEs	ambiv	dism	secure	PRFQ IC	PRFQ CM	PRFQ PM	age	econhard	parity
ACEs	1.00										
PACEs	**0.01****	1.00									
ambiv	0.36	-0.15	1.00								
dism	0.10	-0.13	0.09	1.00							
secure	-0.29	0.13	-0.50	0.18	1.00						
PRFQ IC	0.24	0.15	0.17	0.07	**-0.03***	1.00					
PRFQ CM	**-0.04***	**0.04***	-0.08	0.19	**0.03***	0.46	1.00				
PRFQ PM	-0.15	-0.17	**0.04***	-0.33	-0.14	-0.33	-0.21	1.00			
age	0.06	0.10	-0.21	0.21	0.07	-0.06	-0.12	-.01	1.00		
econhard	0.15	**-0.03***	0.10	0.06	-0.10	0.10	0.07	**.01****	0.10	1.00	
parity	**-.0.03**	-0.15	-0.17	0.19	0.12	-0.18	**-0.04***	**0.03***	0.52	0.20	1.00

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

Table 3 represents the structural equation model (SEM) that examined the mediating relationship of adult attachment style on parental reflective functioning interest and curiosity. The covariate relationship between the dismissive and ambivalent attachment styles was insignificant so it was removed in order to gain one extra degree of freedom. PRFQ IC is the highest form of parental reflective functioning with the most positive reported outcomes of the three parental reflective functioning types. While no

attachment styles mediated the pathway to PRFQ IC, there were some trends in significant relationships with the predictors and controls. The model shows that ambivalent attachment style was significantly associated with ACEs (b = .16, p < .000) and with PACEs (b = -.07, p < .033). Secure attachment was significantly and negatively associated with ACEs (b = -.10, p < .008) and significantly and positively associated with PACEs (b = .06, p < .039). PRFQ CM was significantly and positively associated with ACEs (b = .11, p < .043) and PACEs (b = .08, p < .045).

Table 3
Structural equation model for ACEs, PACEs, adult attachment styles, and PRF interest and curiosity

	b	S. E.	*p*
Ambivalent			
ACEs	**0.16**	**0.04**	**0.000**
PACEs	**-0.07**	**0.03**	**0.033**
Econ Hard	0.16	0.20	0.411
Age	0.33	0.23	0.122
Parity	0.33	0.23	0.160
Dismissive			
ACEs	0.04	0.04	0.284
PACEs	-0.24	0.04	0.352
Econ Hard	0.27	0.17	0.874
Age	0.03	0.16	0.062
Parity	-0.08	0.20	0.691
Secure			
ACEs	**-0.10**	**0.04**	**0.008**
PACEs	**0.06**	**0.03**	**0.039**
Econ Hard	-0.10	0.17	0.538

Table 3 cont.

Parity	-0.26	0.20	0.198
PRFQ CM			
ambivalent	0.10	0.14	0.485
dismissive	0.12	0.15	0.403
secure	0.14	0.17	0.404
ACEs	**.11**	**0.06**	**0.043**
PACEs	**0.08**	**0.04**	**0.045**
Econ Hard	0.30	0.22	0.162
Age	-0.02	0.02	0.415
Parity	0.33	0.25	0.187

Table 4 presents the measurement model results for the SEM model. Global fit statistics indicated a good fit for the model (chi^2=.36, p = .546, df = 1, CFI = 1.00, TLI = 1.25, Probability RMSEA = 0.50, RMSEA Estimate = 0.00, C.I. = 0.00, 0.168. The upper bound of the C.I. was a little high but the baseline comparison was very good. Estimates on exogenous variables are very similar for models one through three.

Table 4
Global Fit Statistics

Chi Square Test of Model Fit	
Value	0.36
Degrees of Freedom	1
p-value	0.54
RMSEA	
Estimate	0.00
90% C.I.	0.00 – 0.168
Probability RMSEA	0.50
CFI/TLI	
CFI	1.00
TLI	1.25

Figure 1 represents the model pathways for structural equation models one through three.

Figure 1
Structural equation model for ACEs, PACEs, adult attachment styles and parental reflective functioning.

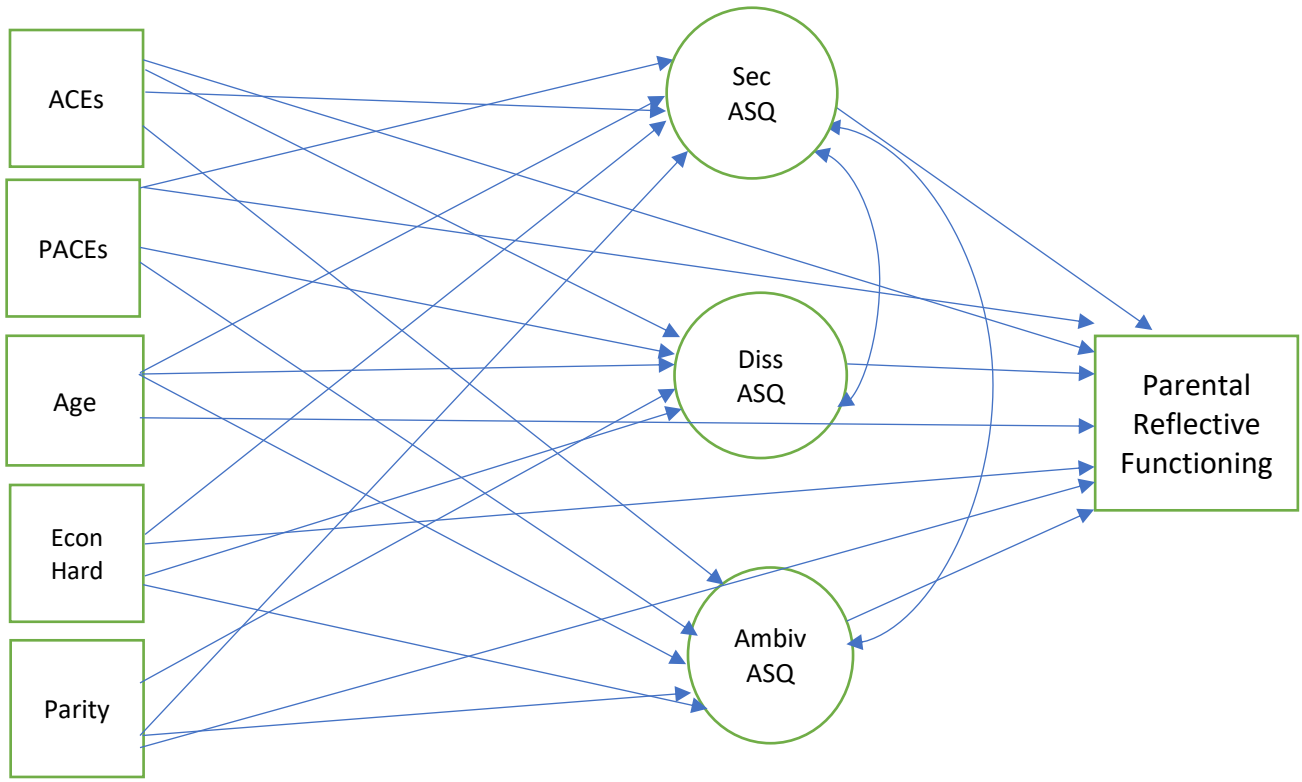


Table 5 presents the SEM for ACEs, PACEs, adult attachment styles and PRFQ CM. The analyses shows that ACEs was significantly and positively associated with ambivalent attachment style (b = .17, p < .000) and significantly and negatively associated with PACEs (b = -.07, p < .032). Secure attachment was significantly associated with ACEs (b = -.10, p < .008) and with PACEs (b = .06, p < .040). Dismissive attachment style mediated the pathway to PRFQ CM (b = .37, p < .012) and age was significantly and

negatively associated with PRFQ CM (b = -.05, p < .031).

Table 6 represents the SEM that examined the mediating relationship of adult

Table 5
Structural equation model for ACEs, PACEs, adult attachment style and PRF certainty of mental states

	b	S.E.	*p*
Ambivalent			
ACEs	**0.17**	**0.04**	**0.000**
PACEs	**-0.07**	**0.03**	**0.032**
Econ Hard	0.16	0.20	0.404
Age	-0.03	0.02	0.125
Parity	0.33	0.23	0.158
Dismissive			
ACEs	0.04	0.04	0.314
PACEs	-0.03	0.03	0.342
Econ Hard	0.01	0.17	0.933
Age	0.03	0.02	0.064
Parity	-0.09	0.20	0.652
Secure			
ACEs	**-0.10**	**0.04**	**0.008**
PACEs	**0.06**	**0.03**	**0.040**
Econ Hard	-0.11	0.17	0.500
Parity	-0.26	0.20	0.188
PRFQ CM			
ambivalent	-0.23	0.14	0.097
dismissive	**0.37**	**0.15**	**0.012**
secure	-0.14	0.17	0.412
ACEs	-0.03	0.06	0.611
PACEs	0.03	0.04	0.497

Table 5 cont.

Age	**-0.05**	**0.02**	**0.031**
Econ Hard	0.20	0.22	0.377
Parity	-0.01	0.25	0.974

attachment style on parental reflective functioning pre- or non-mentalizing modes, which is the lowest form of parental reflective functioning with the poorest reported outcomes. The model shows that ambivalent attachment style was significantly and positively associated ACEs (b = .16, p < .000) and significantly and negatively associated with PACEs (b = -.07, p < .033). Dismissive attachment style was nearly significantly and positively associated with age (b = .03, p < .056). Secure attachment style was significantly and negatively associated with ACEs (b = -.10, p < .007) and significantly and positively associated with PACEs (b = .06, p < .038). Dismissive attachment style was significantly and negatively associated with PRFQ PM (b = -.26, p < .002) meaning that parental reflective functioning pre- or non-mentalizing modes was mediated by dismissive attachment style.

Table 6
Structural equation model for ACEs, PACEs, adult attachment style, and PRF Pre or non-mentalizing modes

Ambivalent	*b*	S.E.	*p*
Aces	**0.16**	**0.04**	**0.000**
Paces	**-0.07**	**0.04**	**0.033**
Econ hard	0.17	0.20	0.399
Age	-0.03	0.02	0.121

Table 6 cont.

Parity	0.33	0.23	0.159
Dismissive			
Aces	0.04	0.04	0.315
Paces	-0.02	0.03	0.358
Econ hard	0.02	0.17	0.887
Parity	-0.08	0.20	0.674
Age	**0.03**	**0.02**	**0.056**
Secure	|		
Aces	**-0.10**	**0.04**	**0.007**
Paces	**0.06**	**0.03**	**0.038**
Econ hard	-0.11	0.17	0.507
Parity	-0.26	0.20	0.189
Age	-0.00	0.02	0.994
PRFQ PM|			
Ambivalent	0.02	0.08	0.773
Dismissive	**-0.26**	**0.08**	**0.002**
Secure	-0.05	0.09	0.620
Aces	-0.04	0.03	0.238
Paces	-0.04	0.03	0.067
Econ hard	0.01	0.13	0.954
Parity	-0.13	0.15	0.369
Age	-0.01	0.01	0.541

Table 7 represents the descriptive statistics for neglect, PACEs, adult attachment styles, and ATOD. The mean for neglect was .38 with a range of 0 to 1 (SD = .49). The mean for PACEs was 7.07 with a range of 0 to 10 (SD = 2.93). The mean for ambivalent adult attachment style was 3.27 with a range of 1 to 5.5 (SD = 1.03). The mean for

dismissive adult attachment style was 4.38 with a range of 1 to 6 (SD = .81). The mean for secure adult attachment style was 3.98 with a range of 1.88 to 6 (SD = .83). The mean for PRFQ IC was 5.5 with a range of 2 to 7 (SD = 1.15); PRFQ CM mean was 4.58 with a range of 2 to 7 (SD = 1.13); PRFQ PM mean was 1.55 with a range of 1 to 4.17 (SD = .69); ATOD mean was .46 with a range of 0 to 1 (SD = .50); age mean was 25.03 with a range of 16 to 38 (SD = 5.50); economic hardship mean was .56 with a range of 0 to 1 (SD = .50; parity mean was 2.22 with a range of 1 to 4 (SD = .94).

Table 7
Descriptive statistics for neglect, PACEs, adult attachment styles, and ATOD

Variable	Obs	Mean	Std dev	Min	Max
neglect	159	0.38	0.49	0.00	1.00
paces	159	7.07	2.93	0.00	10.00
ambiv	96	3.27	1.03	1.00	5.50
dism	96	4.38	0.81	1.00	6.00
secure	96	3.98	0.83	1.88	6.00
PRFQ IC	108	5.50	1.15	2.00	7.00
PRFQ CM	108	4.58	1.13	2.00	7.00
PRFQ PM	108	1.55	0.69	1.00	4.17
ATOD	96	0.46	0.94	1.00	4.00
age	176	25.03	5.50	16.00	38.00
econhard	158	0.56	0.50	0.00	1.00
parity	171	2.22	0.94	1.00	4.00

Table 8 represents the correlation statistics for ATOD, neglect, adult attachment styles, and parental reflective functioning. Dismissive adult attachment style was significantly and positively associated with neglect (.04); PRFQ IC was significantly

correlated with dismissive attachment style (.05) and secure attachment style (-.05); PRFQ CM was significantly correlated with neglect (.02), PACEs (.02), ATOD (-.03), and secure attachment (.03); PRFQ PM was significantly correlated with neglect (-.000) and ambivalent attachment style (.04); ATOD was significantly correlated with PACEs (.05), ambivalent attachment style (.02), dismissive adult attachment style (-.01), PRFQ CM (-.03), and parity (.03); economic hardship was significantly associated with dismissive attachment (.05) and PRFQ PM (.01); parity was significantly associated with neglect (.02), PRFQ CM (-.04), PRFQ PM (.03), and ATOD (.03).

Table 8
Correlations statistics for neglect, PACEs, adult attachment style, and ATOD

	neglect	PACEs	ATOD	ambi	dism	secure	PRFQ IC	PRFQ CM	PRFQ PM	age	econ	parityV2
neglect	1.00											
PACEs	-0.20	1.00										
ATOD	-0.08	**0.05***	1.00									
ambi	0.40	-0.14	**0.02***	1.00								
dism	**0.04***	-0.16	**-0.01****	0.10	1.00							
secure	-0.32	0.12	0.13	-0.50	0.18	1.00						
PRFQ IC	0.14	0.07	0.15	0.20	**0.05***	**-0.05***	1.00					
PRFQ CM	**0.02***	**0.02***	**-0.03***	-0.07	0.18	**0.03***	0.46	1.00				
PRFQ PM	**-0.00*****	-0.19	-0.09	**0.04***	-0.33	-0.14	-0.36	-0.22	1.00			
age	-0.06	0.10	0.16	-0.21	0.21	0.07	-0.07	-0.12	-0.11	1.00		
econhard	0.25	-0.06	0.06	0.11	**0.05***	-0.11	0.07	0.06	**0.01****	0.09	1.00	
parity	**0.02***	-0.16	**0.03***	-0.17	0.19	0.12	-0.20	**-0.04***	**0.03***	0.52	0.19	1.00

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

MPlus was used to conduct the structural equation model analysis that examined the relationship between childhood neglect, PACEs, and ATOD, mediated by adult attachment adult attachment. Table 9 represents the SEM results. None of the variables

were significantly associated with ATOD. As expected, neglect was significantly and negatively associated with secure adult attachment style (b = -.56, p < .002), as well as ambivalent adult attachment style (b = .80, p < .000).

Table 9
Structural equation model for neglect, PACEs, adult attachment styles, and ATOD

	b	S.E.	*p*
Smoking			
Neglect	0.08	0.10	0.458
Paces	0.01	0.02	0.592
Ambivalent	0.03	0.06	0.598
Dismissive	0.02	0.06	0.782
Secure	0.02	0.08	0.834
Econ hard	0.11	0.08	0.196
Parity	-0.09	0.10	0.356
Age	0.00	0.01	0.644
Secure			
Neglect	**-0.56**	**0.17**	**0.002**
Paces	0.04	0.03	0.210
Econ hard	-0.06	0.18	0.735
Parity	-0.24	0.19	0.202
Age	0.01	0.02	0.768
Ambivalent			
Neglect	**0.80**	**0.18**	**0.000**
Paces	-0.04	0.03	0.250
Econ hard	0.10	0.19	0.595
Parity	0.30	0.24	0.200
Age	-0.02	0.02	0.261
Dismissive			
Neglect	0.03	0.17	0.861
Paces	-0.02	0.03	0.421
Econ hard	0.04	0.16	0.797
Parity	0.30	0.24	0.200
Age	0.20	0.20	0.261

Table 10 represents the descriptive statistics for neglect, PACEs, adult

attachment styles and intimate partner violence. The mean for neglect was .38 with a range of 1 to 1 (SD = .49); the mean for PACEs was 7.07 with a range of 0 to 10 (SD = 2.93); ambivalent adult attachment style mean was 3.27 with a range of 1 to 5.5 (SD = 1.03); the mean for dismissive adult attachment style was 4.38 with a range of 1 to 6 (SD = .81); the mean for secure adult attachment style was 3.98 with a range of 1.88 to 6 (SD = .83); age mean was 25.03 with a range of 16 to 38 (SD = 5.50); economic hardship mean was .56 with a range of 0 to 1 (SD = .50); parity mean was 2.22 with a range of 1 to 4 (SD = .94); IPV mean was .64 with a range of .5 to 1.13 (SD = .10).

Table 10
Descriptive statistics for neglect, PACEs, adult attachment styles, and IPV

Variables |	Obs	Mean	Std. dev.	Min	Max
neglect	159	0.38	0.49	0.00	1
paces_	159	7.07	2.93	0.00	10
ambiv	96	3.27	1.03	1.00	5.5
dism	96	4.38	0.81	1.00	6
secure	96	3.98	0.83	1.88	6
age	176	25.03	5.50	16.00	38
econhard	158	0.56	0.50	0.00	1
parity	171	2.22	0.94	1.00	4
ipv	126	0.64	0.10	0.50	1.125

Table 11 represents the correlation statistics for neglect, PACEs, adult attachment styles, PRF, and IPV. Dismissive adult attachment style was significantly and positively associated with neglect (.04); PRFQ IC was significantly associated with dismissive adult attachment style (.05) and secure adult attachment style (-.05); PRFQ CM was

significantly associated with neglect (.02), PACEs (.02), and secure adult attachment style (.03); PRFQ PM was significantly associated with neglect (-.00) and ambivalent adult attachment style (.04); economic hardship was significantly associated with dismissive adult attachment style (.05) and PRFQ PM (.01); parity was significantly associated with neglect (.02), PRFQ CM (-.04), and PRFQ PM (.03); IPV was significantly associated with secure adult attachment (-.03), PRFQ IC (-.01), PRFQ CM (.02), and PRFQ PM (-.05).

Table 11
Correlation statistics for childhood neglect, PACEs adult attachment styles and intimate partner violence

	neglect	paces	ambiv	dism	secure	PRFQ IC	PRFQ CM	PRFQ PM	age	econ hard	parity	IPV
neglect	1.00											
paces	-0.20	1.00										
ambiv	0.40	-0.14	1.00									
dism	**0.04***	-0.16	0.10	1.00								
secure	-0.32	0.12	-0.50	0.18	1.00							
PRFQ IC	0.14	0.07	0.20	**0.05***	**-0.05***	1.00						
PRFQ CM	**0.02***	**0.02***	-0.07	0.18	**0.03***	0.46	1.00					
PRFQ PM	**-0.00*****	-0.19	**0.04***	-0.33	-0.14	-0.36	-0.22	1.00				
age	-0.06	0.10	-0.21	0.21	0.07	-0.07	-0.12	-0.11	1.00			
econhard	0.25	-0.06	0.11	**0.05***	-0.11	0.07	0.06	**0.01****	0.09	1.00		
parity	**0.02***	-0.16	-0.17	0.19	0.12	-0.20	**-0.04***	**0.03***	0.52	0.20	1.00	
ipv	0.12	-0.09	0.09	0.07	**-0.03***	**-0.01***	**0.02****	**-0.05***	0.17	0.16	0.12	1.00

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

MPlus was used for the SEM analysis for model five - childhood neglect and PACEs predicting intimate partner violence mediated by adult attachment style. Table 12

represents the SEM results. The model does not show that intimate partner violence was predicted by neglect or PACEs. The correlations with the predictors and the mediators showed the same trends that were already mentioned with Model four. The model was a good fit and was a strong model for the analysis and the variations in correlations among them was only slight. Figure 2 represents the model for the SEM analyses for models four and five.

There were very small fluctuations in outcomes for the two predictors, ATOD and IPV, indicating that there is consistency across the results. Estimates on exogenous variables are very similar for models four and five.

Table 12
Structural equation model for neglect, PACEs, adult attachment styles, and IPV

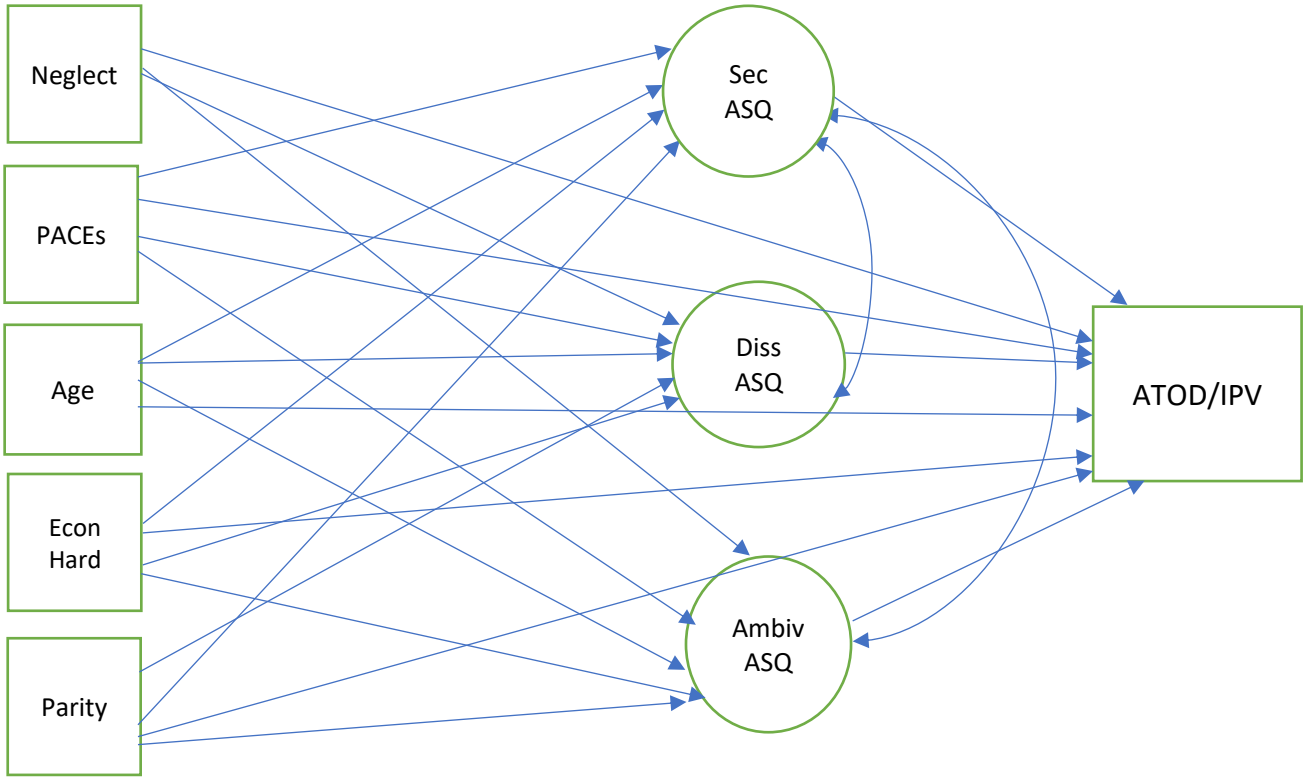
	b	S.E.	*p*
Neglect	-0.88	0.81	0.281
Paces	-0.03	0.10	0.748
Ambi	0.43	0.43	0.317
Dism	0.74	0.48	0.121
Secure	0.27	0.62	0.659
Age	0.04	0.08	0.626
Econ Hard	0.77	0.67	0.248
Parity	-0.96	1.24	0.439
Secure			
Neglect	-0.53	0.17	0.002
Paces	0.03	0.03	0.216
Age	0.00	0.02	0.786
Econ hard	-0.07	0.18	0.707

Table 12 cont.

Parity	-0.24	0.19	0.207
Ambivalent			
Neglect	**0.78**	**0.18**	**0.000**
Paces	-0.04	0.03	0.273
Age	-0.02	0.02	0.216
Econ hard	0.11	0.19	0.555
Parity	0.30	0.23	0.206
Dismissive			
Neglect	0.03	0.17	0.844
Paces	-0.02	0.03	0.422
Age	**0.03**	**0.01**	**0.027**
Econ hard	0.04	0.16	0.810
Parity	-0.08	0.18	0.677

Figure 2

Structural equation model for neglect, PACEs, adult attachment styles and parental reflective functioning and ATOD/IPV.



CHAPTER V

DISCUSSION

Models one through three examined the associations between childhood experiences, adult attachment styles, and parental reflective functioning to answer research questions one through eleven. Research question number one examined the relationship between ACEs and adult attachment style. Analyses showed that ACEs were significantly and negatively associated with secure adult attachment style (b = -.10, p < .008), significantly and positively associated with ambivalent attachment style (b = .16, p < .000), but not with dismissive attachment style, so the null hypothesis was partially rejected. These results suggest that the more adversity that occurs in childhood the higher the ambivalent attachment style score and the less adversity experienced in childhood the higher the secure adult attachment score. This is a similar finding to what is currently in the literature – that ambivalent (but also dismissive – which was not found in this study) is significantly associated with childhood neglect, physical and, or sexual abuse (Bifulco et al., 2006). A central idea of attachment theory is that attachment styles get their origins in early childhood and extend their influence across one's lifespan. Adversity has been identified in the research as an antecedent to attachment difficulties later in life. However, there is a lack of research on how positive childhood experiences can offset the adversity of childhood in terms of attachment relationships. The second

hypothesis is that PACEs will be positively associated with secure attachment style and negatively associated with dismissive and ambivalent attachment style. Analyses showed that PACEs were significantly and negatively associated with ambivalent attachment and positively and significantly associated with secure attachment but there was not a significant relationship with dismissive attachment. This suggests that positive experiences in childhood can offset some of the negative attachment outcomes that can occur as a result of childhood adversity.

Research questions three through eleven examined the association between the three adult attachment styles; ambivalent, dismissive, and secure, with the three subtypes of parental reflective functioning; PRF interest and curiosity (PRF IC), PRF certainty of mental states (PRF CM), and PRF pre- non mentalization modes (PRF PM). Dismissive adult attachment style was the only pathway that was mediated with PRF. Dismissive attachment mediated the pathway to PRFQ CM ($b = .37$, $p < .012$). This finding suggests that adults who have a dismissive adult attachment style may hypermentalize and feel overly confident in their assessment of their child's mental states. Dismissive attachment style mediated the pathway to PRFQ PM ($b = -.26$, $p < .002$). This was a negative association, which fits with the positive association of hypermentalizing of the PRF CM subtype. PRF pre- non mentalizing modes is more suggestive of hypomentalizing and is associated with poor parenting practices and outcomes (Luyten et al., 2017).

There is conflicting research about outcomes for the anxious and dismissive

subtypes of adult attachment style. Several studies have demonstrated that ambivalent attachment style is significantly associated with a desire to be extremely close in relationships (Selcuk et al., 2010) which likely has its roots in anxious and insecure attachment that developed early in life with the primary caregiver. This type of attachment may interfere with a mother's ability to provide a secure base from which her child can explore his/her autonomy. Ambivalent or anxious mothers have a tendency to worry excessively about their performance as parents which may lead to feelings of anger and frustration if they do not meet the expectations they have in place for themselves, creating conflict between mother and child (Selcuk et al., 2010). Further, anxious, or ambivalent attachment is associated with being intrusive, demanding, and out of sync in relationships. On the other hand, dismissive attachment style has been associated with discomfort with closeness in relationships demonstrated by feelings and behaviors of detachment and insensitive caregiving (Jones et al., 2015). According to Bowlby, the internal working model associated with dismissive attachment style is positive perception of the self and negative toward others (Bowlby, 1988). In terms of the age variable being significantly correlated, it is possible that with age, comes maturity, with maturity, comes a more positive perception of one's self.

There are very few studies that examine PRF and its association with adult attachment. There have been three to date; Rostad and Whitaker (2016), Luyten et al. (2017), and Pazzaglo et al., (2018). Luyten found that PRFQ CM was independent of dismissive attachment. Pazzaglo (2018) found that PRF CM was related to secure adult

attachment in both mothers and fathers. Rostad and Whitaker (2016) found that positive parenting practices was related to PRF CM. Parental autonomy, which is associated with secure and dismissive attachment styles, may explain a parent's certainty about the way they believe their child is feeling or behaving. While the authors of the PRF questionnaire (Luyten et al., 2009) may argue that parents who demonstrate certainty about mental states may not be characterized as having positive parenting practices, Rostad and Pazzaglo differ in their opinions. Rostad maintains that children's meanings are not always readily apparent and that caregivers may just need clarification. Rostad further claims that parents may be more certain about their child's mental states because they are more involved with their children. The significant and negative association with pre- non mentalizing modes in this study could substantiate the latter's position since PRFQ PM is associated with poor parenting practices. Secure adult attachment is associated with parental autonomy, as well as positive parenting practices and outcomes (Rostad & Whitaker, 2016). Additionally, dismissive attachment style's association with age is near significant ($b = .33$, $p < .062$). There is consistent evidence that people scoring high in neurotic personality characteristics (a construct that shares empirical and conceptual similarities to anxious and ambivalent adult attachment) become less neurotic as they age (Noftle & Shaver, 2006). Studies are beginning to examine age differences in adult attachment styles and have found evidence that younger adults who scored high on ambivalent or anxious adult attachment, later scored higher on the dismissive attachment subscale (Chopik et al., 2013). It is commonly known in the literature that adolescents

and young adults develop more autonomy and independence as they age (Erickson, 1968). Anxiety tends to be higher among young adults when compared to older adults and avoidance has been found to be higher in middle adulthood when compared to younger adults (Chopik et al., 2013). Bowlby (1973) believed that people revised attachment orientations based on life experiences. Other studies have found age related shifts in attachment orientation. Mickelson et al., (1997) found that avoidance scores were higher in middle-aged adults than in younger adults and Birnbaum (2007) found that avoidance was positively correlated with age. Chopin found that adult attachment anxiety was higher among younger adults when compared to middle-aged adults. Chopin held the belief that as adults age and accept new roles in their lives such as romantic relationships and parenting, they may change their attitudes and behaviors in order to meet the obligations in their new roles (Roberts et al., 2005). Life span development could be an influencing factor in changing attachment orientations. Higher avoidance could be a reflection of the processes of individuation and increasing levels of independence as a person ages and matures. Higher avoidance that comes with maturity could have a calming effect on the anxiety experienced earlier in a person's life.

Study questions 12 and 13 examined the associations of ATOD with childhood neglect and the potential mediation relationship of ATOD and adult attachment styles, respectively. Results did not result in rejection of the hypotheses for either of these two questions. It could be that ATOD reporting was particularly low for this population of pregnant mothers. According to the 2013 report by the National Survey on Drug Use and

Health, it is estimated that 5.4% of pregnant women from the ages of 15 and 44 reported using illicit drugs (Substance Abuse and Mental Health Services Administration, 2014). But substance use disorders among pregnant women is commonly underreported, and therefore missed and underdiagnosed and under-treated (McLafferty, etal., 2016). Women who are dealing with substance related problems tend to consult with their medical providers rather than get substance use treatment. Physicians and medical service providers frequently fail to recognize the substance use related issue (Uziel-Miller & Dresner, 2002). Physicians are significantly more likely to recognize substance abuse in their male patients than female patients and are more likely to prescribe psychotropic drugs for the treatment of complaints in their female versus male patients. In turn, female patients are more likely to become addicted to prescription drugs (Uziel-Miller & Dresner, 2002). Due to fear of legal consequences, pregnant women dealing with substance use are not as likely to obtain prenatal care than pregnant women who do use substances (Uziel-Miller & Dresner, 2002). Mental health professionals working with substance using pregnant women must deal, not only with the standard issue of underreporting substance use, but also with the perceived stigma and shame attached to substance use during pregnancy, which further inhibits disclosure about substance use (McLafferty, et al., 2016; Yonkers, et al., 2011). Mental health professionals must work to help clients overcome the stigma of substance use by establishing rapport and through education on the legal and medical consequences of substance use during pregnancy and its effects on mother and child (McLafferty et al., 2016). The population in this study

reported a low incidence of substance use, making it difficult to analyze substance use.

Finally, research questions 14 and 15 examined the association between childhood neglect and intimate partner violence and whether there is mediation between adult attachment styles and IPV. Neither of these hypotheses were rejected since there were no significant associations between IPV and childhood neglect or adult attachment styles. Intimate partner violence can be very difficult to measure and seemed very low for this population sample. A significant predictor for intimate partner violence is low socioeconomic status (CDC, 2021) and 56% of this sample reported economic hardship. Another predictor is childhood adversity, and the mean ACE score for this sample was 1.83 – yet only 8% of this sample reported being a victim of IPV. Another consideration is self-report of intimate partner violence. Women who are victims of domestic violence may become acclimated to the abuse and it eventually becomes a normal way of life for them. Therefore, "feeling unsafe" may be a relative interpretation. Often, women in abusive relationships have distorted ways of interpreting domestic violence through the abusive partner's minimization of the severity of the abuse, completely denying incidents of abuse "It's not like you got injured", "You made it all up" or "You're blowing things way out of proportion". Abusers may also claim that they had to defend themselves through their abuse (Henning & Holdford, 2006). The IPV measure used in this study included the question, "My husband or partner threatened me or made me feel unsafe in some way". Self-report items that are more specific e.g., "My husband shoved me" or "My husband struck me" could possibly encourage more accurate and full disclosure.

Implications

This study failed to reject 13 of the 15 hypotheses. The two hypotheses that were rejected were dismissive attachment style and its mediation of PRFQ CM and PRFQ PM. The relationship that dismissive attachment style had with PRFQ CM was positively correlated and PRFQ PM was negatively correlated. PRFQ PM is associated with the poorest parenting practices, e.g., parental lack of concern about the child's inner world and difficulties with interpretation of the child's inner world (Fonagy et al., 2016) with the most significant negative child outcomes of the three subtypes of parental reflective functioning. Poor outcomes among children may include the inability to regulate their own emotions – especially with negative emotions (Fonagy et al., 2002) and impairments in social emotional development (Grienberger et al., 2005). As adults get older, their dependence on social validation decreases and they become more autonomous (Zhang & Labouvie-Vief, 2004). There have been findings of negative correlations between age and preoccupied or anxious attachment (Mickelson et al., 1997) and positive correlations between age and dismissive attachment (Magai et al., 2001). This could have to do with better affect regulation that occurs later in life (Labouvie-Vief & Medler, 2003), as well as a better sense of psychological well-being and fewer negative emotions (Brandsta¨dter & Greve, 1994)

The significance levels that were observed were childhood experiences and adult attachment styles. Data showed that adversity in childhood was significantly associated with ambivalent adult attachment style. This is indicative of a child who has developed a

negative internal working model of self and others. This may be characterized by feelings of neediness in relationships because there is a craving for closeness juxtaposed with a belief of being unworthy of closeness. This anxious and insecure attachment type may be passed from one generation to the next. Data also showed that ACEs, childhood neglect and PACEs were significantly associated with secure attachment style. This may indicate that the more adversity that is experienced during childhood, the less likely secure adult attachment style will develop. The good news is that results also showed that positive childhood experiences may offset the negative impact of ACEs with ambivalent attachment style and potentially promote secure adult attachment style.

The association between dismissive attachment style and PRF CM, along with the research about dismissive attachment and its relationship with experience and autonomy may possibly be an indication that PRF CM may have more positive results than was originally claimed by the authors of the PRFQ measure - particularly with parents who score high on the dismissive attachment subtype.

Direction for Future Research

The ability to regulate emotions and manage stress levels are critical skills for parents. Research is beginning to explore how parents with substance use disorders may find both of these skill sets extremely difficult to maintain. Stress from parenting, in and of itself, is a stressor that leads to increased cravings for substances, (Rutherford et al., 2013), making parents with trauma histories vulnerable to negative feedback loops (Bosk et al., 2019). While not all mothers who have substance abuse issues have maladaptive

parenting, when compared to non-substance using mothers, they are twice as likely to lose custody of their children due to neglect (Department of Health & Human Services, 1999). Mothers who have substance use problems often place their needs for substances before their infants' needs. When the mother is not using, there is a preoccupation with obtaining alcohol/drugs, which results in care that is inconsistent, frequently leading to issues of neglect for the infant (Judd et al., 2018). Mothers who have substance use disorders coupled with her substance exposed infant are a challenging pair for each other. Substance-exposed infants frequently have difficulty regulating their distress, wakefulness and sleep, which requires sensitivity from the parent. This presents an especially difficult situation for the substance using mother, particularly a mother who has a history of trauma, as well as attachment insecurities (Pajulo et al., 2012). These contradictory dynamics and needs can often lead to an increased risk of the infant being abused or neglected. Substance using mothers have the added obstacle of "falling in love" with their infant (Pajulo eta l., 2012). Obstacles may include trauma histories, accumulative stress and traumas, insecure attachment styles, and substance use. Substance abuse tends to significantly weaken and compromise brain functions that are associated with caring for infant children such as functions that are related to reward, motivation, self-awareness, capacity to reflect on one's own behavior, and emotion regulation (Goldstein et al., 2009). Brain imaging performed on mothers experiencing a normal pregnancy showed that neurobiological changes in the mother's brain, particularly in the reward system, leads to mothers experiencing "maternal

preoccupation", which is linked to mothers experiencing joy and reward (Mayes et al., 2009). When mothers have a substance abuse problem, motivation for investment in the child relationship are undermined and the capacity for bonding is weakened (Allen et al., 2008). For these reasons, substance using mothers have a difficult time remaining committed to treatment, making it exceptionally challenging for clinicians. Research has begun to focus on the relationship between the substance-using mother and her child. Treatment that focuses on maternal-fetal bonding can motivate the mother to abstain from substances, take better care of her health, and make better choices for the benefit of the relationship with her infant. Treatments that focus on the mother's abstinence in conjunction with a focus on intensively supporting the mother-child bond – specifically strengthening the mother's reflective functioning capacity are leading to positive and successful outcomes (Suchman et al., 2012). Therapy can assist the mother in viewing her unborn infant and post-birth as a person separate from herself with thoughts, feelings, and intentions. When the mother can view her child as independent of herself, it fosters curiosity and an inquisitive attitude toward her infant, bringing novelty and pleasure to the mother-child interactions. Even though parental reflective functioning has its roots in early childhood experiences, PRF can be improved with treatment interventions that focus specifically on PRF capacities, particularly with high-risk and substance using mothers. For instance, techniques called, "speaking for the child" or "using the voice of the infant" (Pajula et al., 2012, p. 73) can assist mother's in taking their infant's perspectives into account. The aim is for the mother to learn how to tolerate the

dependency of her infant and place a high priority on the emotional and developmental needs of her infant. Another aim is to assist mothers who have traumatic and attachment disruption events to rework her internal working model of self and others instead of remaining trapped in a cycle of troubled parenting, traumatic themes, and perpetual attachment insecurity. In a pilot study, researchers found that mindfulness skill-building, along with the use of in-home fetal Doppler monitors resulted in an increase of maternal feelings of fetal bonding (Shreffler et al., 2019). Bonding in vitro and in the subsequent three years of a child's life can have profound development outcomes. Early intervention is critical to psychological, neurological, social development and long-term well-being (Schore, 1996; Judd et al., 2018), with the goal of helping mother get in touch with her maternal self. Stern (1991) described this as 'the motherhood constellation', which is the mother's identification as an attachment figure with the capacity to tolerate stress in this role with her infant (Judd et al., 2018).

The positive effects of dismissive adult attachment and PRF CM are suggested for further research, since there may be more positive outcomes for PRF CM than originally thought.

Study Limitations

This study did not take into account intimate partner violence outcomes that might have been influenced by childhood physical abuse versus witnessing domestic violence between the parents. Findings on children being exposed to violence during childhood increasing the propensity to perpetuate intimate partner violence are inconsistent. The

consequences of the two types of ACEs may look very different and have other complex variables to consider such as socioeconomic status and demographic characteristics (Widom et al., 2014). Research shows that most types of childhood maltreatment, including physical and sexual abuse, have the capacity to increase the risk of perpetration and victimization of intimate partner violence (McMahon et al., 2015). Akers' social learning theory, intergenerational transmission theory and male peer support theory have focused on the importance of outcomes surrounding witnessing violence as a child. Some of these theories have gained some traction in empirical research – especially Akers, but these theories have many limitations. One such limitation is the lack of scope that includes all forms of intimate partners and all forms of intimate partner violence (Sellers et al., 2005).

In addition to underreporting, participants who are affected by the study variables, e.g., substance use and intimate partner violence, may in and of themselves make participants less likely to participate in the study. A few participants responded after dropping out of the study, citing termination of pregnancy, either by miscarriage, or abortion, for the reason for dropping from the study but there were other participants who lost contact with the study altogether. Therefore, significance levels that I expected to find were lacking and the estimates are quite conservative. Also, this was a relatively small sample size with a large number of variables under examination. This most likely had an impact on effect size – so that what effect size that was observed in this study may be quite telling.

Conclusion

This study was about examining the relationship between childhood adversity and childhood positive experiences and their impacts on adult attachment styles and parental reflective functioning. This study also examined whether adult attachment style had a mediating effect on parental reflective functioning. Dismissive adult attachment style was found to be negatively associated with PRF pre or non-mentalization modes and positively associated with PRF certainty of mental states. Age was also found to be significantly and positively associated with dismissive attachment style. Structural equation models were used in Stata software to examine these relationships. This study also examined the association between neglect and positive childhood experiences with substance use and intimate partner violence, mediated by adult attachment styles. Structural equation models were used in MPlus software to examine these relationships. While childhood experiences were not significantly associated with substance use or intimate partner violence, and adult attachment styles were not found to be mediators, adversity and positive childhood experiences were once again found to be significantly associated with dismissive and ambivalent attachment styles. Age was also found to be significantly and positively associated with dismissive attachment.

Results indicated that while adversity was significantly associated with ambivalent attachment, positive childhood experiences showed a buffering effect – demonstrating the importance of PACEs in a child's life. When it comes to aging – as adults get older and gain life experiences their coping strategies become more adaptive.

This may manifest itself in increased autonomy, a characteristic of dismissive adult attachment style. Affect regulation tends to improve later in life and there is a better sense of psychological well-being with fewer negative emotions. Additionally, as young mothers of very young children age and their children age as well, both become more adaptive to one another. This occurrence can be observed in the characteristics of dismissive adult attachment, as well as the positive association with PRF certainty of mental states. Parents who appear to be overly certain of their child's mental states may just need some additional guidance to be in better attunement with their child's inner world. More research is needed to further explore the relationship between dismissive adult attachment style, age, and PRF certainty of mental states.

Addiction has a devastating impact on parenting. It inhibits a parent's desire to invest in their abilities as parents. When a parent has decided to enter into substance use treatment, studies have shown that focusing on teaching parental reflective functioning gets positive results in helping parents maintain sobriety.

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APPENDICES

APPENDIX A

Survey: Adverse Childhood Experiences (ACEs)

Answer “Yes” or “No” for the following?

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?
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?
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?
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?
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?
6. Were your parents ever separated or divorced?
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?
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
9. Was a household member depressed or mentally ill or did a household member attempt suicide?
10. Did a household member go to prison?

APPENDIX B

Survey: Protective and Compensatory Childhood Experiences (PACEs)

Answer "Yes" or "No" to the following questions that ask about experiences you may have had as a child.

1. Did you have someone wo loved you unconditionally (you did not doubt that they cared about you)?
2. Did you have at least one best friend (someone you could trust, had fun with)?
3. Did you do anything regularly to help others (e.g., volunteer at a hospital, nursing home, church) or do special projects in the community to help others (food drives, Habitat for Humanity)?
4. Were you regularly involved in organized sports groups (e.g., soccer, basketball, track) or other physical activity (e.g., competitive cheer, gymnastics, dance, marching band)?
5. Were you an active member of at least one civic group or a non-sport social group such as scouts, religious group, or youth group?
6. Did you have an engaging hobby-an artistic/creative or intellectual pastime either alone or in a group (e.g., chess club, debate team, musical instrument or vocal group, theater, spelling bee, or did you read a lot)?
7. Was there an adult (not your parent) you trusted and could count on when you needed help or advice (e.g., coach, teacher, minister, neighbor, relative)?
8. Was your home typically clean AND safe with enough food to eat?
9. Overall, did your schools provide the resources and academic experiences you needed to learn?
10. In your home, were there rules that were clear and fairly administered?

APPENDIX C

Survey: Childhood Neglect

Answer “Yes” or “No” to the following:

1. Did you often or very often feel that no one in your family loved you?
2. Did you often or very often feel that no one in your family thought you were special?
3. Did you often or very often feel that your family didn’t look out for each other?
4. Did you often or very often feel that you didn’t have enough to eat?
5. Did you often or very often feel that you had to wear dirty clothes?
6. Did you often or very often feel that you had no one to protect you?
7. Did you often or very often feel that your parents were too high or drunk to take care of you?

APPENDIX D

Survey: Adult Attachment Style (ASQ)

For the next several questions indicate how much you agree or disagree with the following statements based on how you feel in relationships. Choose one of the following answers:

___ Strongly Disagree
___ Slightly Disagree
___ Slightly Agree
___ Strongly Agree
___ Totally Agree

1. I feel at ease in emotional relationships.
2. I would like to be open to others, but I feel that I can't trust other people.
3. I feel uncomfortable when relationships with other people becomes close.
4. I would like to have close relationships with other people, but I find it difficult to fully trust them.
5. I prefer that others are independent of me, and I am independent of them.
6. I often wonder whether people like me.
7. I avoid close ties.
8. I have the impression that usually I like others better than they like me.
9. I trust other people and I like it when other people can rely on me.
10. I am often afraid that other people don't like me.
11. It is important to me to be independent.
12. I find it easy to get engaged in close relationships with others.
13. I feel at ease in intimate relationships.
14. I like to be self-sufficient.
15. I don't worry whether people like me or not.
16. I think it is important that people can rely on each other.
17. I don't worry about being alone, I don't need other people that strongly.
18. I am afraid that I will be deceived when I get too close with others.
19. I usually find other people more interesting than myself.
20. I trust that others will be there for me when I need them.
21. I am wary to get engaged in close relationships because I am afraid to get hurt.
22. It is important to me to know if others like me.

APPENDIX E

Survey: Parental Reflective Functioning (PRFQ)

Listed below are a number of statements concerning you and your child. Read each item and decide whether you agree or disagree and to what extent.
Use the following rating scale, with 7 if you strongly agree; and 1 if you strongly disagree. The midpoint, if you are neutral or undecided, is 4.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

1. The only time I'm certain my child loves me is when he or she is smiling at me.
2. I always know what my child wants.
3. I like to think about the reasons behind the way my child behaves and feels.
4. My child cries around strangers to embarrass me.
5. I can completely read my child's mind.
6. I wonder a lot about what my child is thinking and feeling.
7. I find it hard to actively participate in make believe play with my child.
8. I can always predict what my child will do.
9. I am often curious to find out how my child feels.
10. My child sometimes gets sick to keep me from doing what I want to do.
11. I can sometimes misunderstand the reactions of my child.
12. I try to see situations through the eyes of my child.
13. When my child is fussy he or she does that just to annoy me.
14. I always know why I do what I do to my child.
15. I try to understand the reasons why my child misbehaves.
16. Often, my child's behavior is too confusing to bother figuring out.
17. I always know why my child acts the way he or she does.
18. I believe there is no point in trying to guess what my child feels.

APPENDIX F

Survey: Economic Hardship

In the past year, did any of the following happen to you or members of your household because of a shortage of money? Check “no”, “yes”, or “don’t know”:

1. Could not pay electricity, gas or telephone bills on time.
2. Could not pay the mortgage or rent on time.
3. Pawned or sold something.
4. Went without meals.
5. Was unable to heat home.
6. Asked for financial help from friends or family.
7. Asked for help from welfare/community organizations.

APPENDIX G

Survey: Alcohol, Tobacco, or Other Drugs (ATOD)

Answer “Yes” or “No” to the following:

1. Do you currently smoke cigarettes?
2. Do you currently use vapes or electronic cigarettes?
3. Do you currently use marijuana?
4. Do you currently drink alcohol?

APPENDIX H

Survey: Intimate Partner Violence (IPV)

In the 12 months prior to your pregnancy, did any of the following things happen to you?

1. My husband or partner threatened me or made me feel unsafe in some way.
2. I was frightened for my safety or my family's safety because of the anger or threats of my husband or partner.
3. My husband or partner tried to control my daily activities, for example, controlling who I could talk to or where I could go.
4. My husband or partner forced me to take part in touching or any sexual activity when I did not want to.

During your pregnancy, did any of the following things happen to you?

1. My husband or partner threatened me or made me feel unsafe in some way.
2. I was frightened for my safety or my family's safety because of the anger or threats of my husband or partner.
3. My husband or partner tried to control my daily activities, for example, controlling who I could talk to or where I could go.
4. My husband or partner forced me to take part in touching or any sexual activity when I did not want to.

Since you had your baby, have any of the following things happened to you?

1. My husband or partner threatened me or made me feel unsafe in some way.
2. I was frightened for my safety or my family's safety because of the anger or threats of my husband or partner.
3. My husband or partner tried to control my daily activities, for example, controlling who I could talk to or where I could go.
4. My husband or partner forced me to take part in touching or any sexual activity when I did not want to.

VITA

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