

2022

## Dispositional Joy as a Mediator of Adverse Childhood Experiences and Parental Reflective Functioning

Mollie Brady  
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# Walden University

College of Allied Health

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Mollie Brady

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Walden University  
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Abstract

Dispositional Joy as a Mediator of Adverse Childhood Experiences

and Parental Reflective Functioning

by

Mollie Brady

MA, Saint Mary's University of Minnesota, 2017

BS, Viterbo University, 2013

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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## Abstract

Parental reflective functioning (PRF) is a critical contributor to positive parenting outcomes. Early adverse experiences are a significant risk factor for insensitive parenting practices and poor PRF. Researchers have found that positive emotions, such as dispositional joy (DJ), influence both parenting outcomes and building resilience to stressful events. Adverse childhood experiences (ACEs), DJ, and PRF have been studied extensively in the literature as separate or paired constructs. However, to date, no studies have examined how these variables interact with each other. The purpose of this quantitative study was to explore the relationship between ACEs, DJ, and PRF, and the mediating effect of DJ on the relationship between ACEs and PRF among parents of young children. Tedeschi and Calhoun's posttraumatic growth theory provided the theoretical foundation for this nonexperimental survey research study. Using a correlational design, the surveys from 147 parent participants were analyzed using linear regressions. The study results indicated several important findings. The Joyful Life Scale was found to predict the ACE Neglect subscale as well as the Interest and Curiosity About Mental States (IC) and Pre-Mentalizing (PM) subscales of the Parental Reflective Functioning Questionnaire. These findings are the first of their kind and therefore represent a genuine advance for the literature. Although the results of this study did not support DJ as a mediator of the relationship between ACEs and PRF, there is undeniable value in pursuing a greater understanding of factors that promote the development of PRF. Findings may be used by psychologists for positive social change by assisting parents to better serve their children.

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## Chapter 1: Introduction to the Study

### **Introduction**

This study examined the relationship between adverse childhood experiences (ACEs), dispositional joy (DJ), parental reflective functioning (PRF), and whether DJ mediates the relationship among ACEs and PRF of parents of children who are under the age of 6 years. Emotionally nurturing relationships during a child's first 3 years of life lay the foundation for lifelong health and well-being (Zero to Three, 2016). Researchers and clinicians alike have become more interested in PRF because of the critical role it plays in forming secure parent–infant attachments (Slade, 2005). A growing body of research has demonstrated that parenting outcomes, including PRF, are the result of multiple pathways, and they encompass an individual's unique combination of risk and resiliency factors (Belsky & Vondra, 1989; Camoirano, 2017; Slade, 2005). Childhood maltreatment is one factor that has been shown to negatively impact PRF (Fonagy et al., 1991b). Based on a survey of adults across 25 states, the Centers for Disease Control and Prevention (CDC) estimated that approximately 61% of adults have experienced at least one type of ACE and that one in six adults has experienced four or more types of ACEs. Despite the prevalence of ACEs, not every individual subsequently experiences posttraumatic stress or engages in negative parenting behaviors (Berthelot et al., 2015, as cited in Ensink et al., 2017). In fact, for some individuals, a traumatic experience serves as a catalyst for positive change and growth (Tedeschi & Calhoun, 2004). This finding suggests that characteristics unique to the individual may mediate the relationship between early adverse experiences and parenting outcomes. For example, personality characteristics are associated with both parenting outcomes and ACEs. Specifically,

positive emotions such as DJ play a role in building resilience to stressful events (Tugade & Fredrickson, 2007) and influence responsiveness in parenting (Desjardins et al., 2008). The purpose of this study was to make an original contribution to the existing literature by evaluating the relationships among ACEs, DJ, and PRF and whether DJ mediates the relationship between ACEs and PRF. Expanding the understanding of the relationships among these variables may contribute to positive social change. The information can be used to inform and guide clinical interventions and promote legislation that supports early intervention.

The following sections of this chapter provide the background, problem statement, and purpose of this study. Subsequently presented are the research questions and hypotheses, theoretical framework, and definitions of important terminologies. Finally, I conclude this chapter with a description of the assumptions, scope and delimitations, limitations, and anticipated significance of the study.

### **Background Information**

The concept of PRF has been studied extensively in research on attachment. PRF refers to a parent's awareness of their own mental processes, their acknowledgement of the mental processes of their child, and the use of that information to accurately interpret their child's behavior (Slade, 2005; Slade et al., 2005). A parent's attunement with their child's thoughts, feelings, wants, and motivations plays a central role in parenting (Fonagy et al., 1991b). Additionally, research has demonstrated a strong relationship between maternal behavior and child attachment security (Slade et al., 2005). Bowlby's attachment theory (1969) describes attachment as the enduring emotional bond between infants and the caregivers they rely on for survival. Early attachment patterns

significantly influence future relationships, subjective sense of well-being, and mental health (Fearon, 2017). Infant attachment behaviors, such as smiling and crying, serve the purpose of keeping important caregivers in close proximity to meet the physical and emotional needs of the child (Bowlby, 1969). Salter Ainsworth et al. (2015) identified distinct attachment classifications based on an infant's behavior within the relationship with their caregiver. Research has shown that these patterns persist into adulthood and influence the future presence of psychopathology (Cassidy et al., 2013). A secure attachment style is exhibited by infants who are quickly and easily soothed by their caregivers (Salter Ainsworth et al., 2015).

In contrast, insecure attachment patterns (e.g., avoidant and ambivalent-resistant attachment) demonstrate more maladaptive characteristics, such as misalignment, anxiety, resentment, rejection, being slow to soothe, and intense activation (Salter Ainsworth et al., 2015). Insecure attachment classifications have been shown to be associated with higher rates of internalizing and externalizing behaviors (Cassidy et al., 2013). These outcomes show the value in supporting the development of secure attachment between infants and their caregivers.

The foundational role of PRF in the development of secure attachment suggests the need to understand factors that promote its development. Although childhood maltreatment does not directly predict poor PRF, it is a significant risk factor (Fonagy et al., 1993). Instead, poor PRF is better predicted by the individual's inability to cope with painful memories of past abuse (Fonagy et al., 1993). There is evidence that some parents with a history of maltreatment are at an increased risk of engaging in withdrawn, avoidant, and hostile parenting behaviors (Enlow et al., 2011). The individual's grappling

with distressing memories and engagement in negative parenting behaviors interferes with their reflective capacity within the context of close relationships, such as the one with their child (Camoirano, 2017). Impairments in reflective functioning (RF) can present in the forms of prementalizing or hypermentalizing (Luyten et al., 2017b).

Parents who engage in prementalizing fail to show genuine interest and curiosity in their child's mental state and, as a result, demonstrate a lack of consideration for their child's subjective experience (Luyten et al., 2017b). Parents who hypermentalize tend to be overly confident about their child's mental state, contributing to intrusive parenting behaviors (Luyten et al., 2017b). This may also include an inaccurate interpretation of a child's intentions (Luyten et al., 2017b).

Although maltreatment is a serious risk factor for poor parenting outcomes, not every parent who has experienced early adversity demonstrates impaired PRF (Berthelot et al., 2015, as cited in Ensink et al., 2017). An individual's capacity for PRF is best conceptualized as a multidimensional construct, influenced by internal and external factors (Luyten et al., 2017b). An individual's personality characteristics have been shown to impact both parenting behaviors (Bornstein et al., 2011; Ensink et al., 2017) and the response to adverse experiences (Tugade & Fredrickson, 2007). This supports the value of evaluating additional factors that may mediate the relationship between ACEs and PRF. Specifically, positive emotions as a personality characteristic, such as DJ, may be considered a personal asset to some individuals, promoting positive parenting outcomes. Joy as a dispositional state refers to the tendency to have a lower threshold for experiencing joy, experiencing joy more often, and finding joy in more things (Johnson, 2020). Positive emotions such as joy can play a critical role in building resilience to



stressful events (Tugade & Fredrickson, 2007). Helper and Albarracín (2013) found that some individuals show differences in their dispositional tendency to attend to either negative or positive stimuli. They also identified a positive correlation between higher rates of positive dispositional attitude and curiosity-related personality traits. Similarly, Peters et al. (2015) found that individuals who had higher levels of dispositional optimism demonstrated an increased attentional preference for faces showing positive emotions and spent less time looking at angry faces. A positive emotional disposition supports both curiosity and positive regard toward a child, which are crucial components of PRF and the provision of sensitive caregiving (Caron et al., 2015; Slade, 2005).

There is clear evidence of associations among ACEs, DJ, and PRF. However, to date, no studies have examined how these variables interact with each other. This study makes a unique contribution to the literature by exploring the potential relationships among ACEs, DJ, and PRF.

### **Problem Statement**

Early parent–child attachment classification has been shown to impact functioning across the life span (Ranson & Uricuk, 2008). Both infants who received nurturance and who were abused engage in attachment behaviors with their caregivers (Carlson et al., 1998, as cited in Rainekei et al., 2010). Attachment behaviors allow infants to seek proximity to the caregivers they rely on to survive (Bowlby, 1969). Attachment style differences are influenced by caregiver responsiveness to the infant’s needs (Ranson & Uricuk, 2008). Reflective capacity plays a critical role in a parent’s ability to respond to their child. Parental reflective capacity refers to a caregiver’s ability to understand their own mental state, the mental state of their children, and the impact of those mental states

on behavior (Slade, 2005; Slade et al., 2005). PRF is a crucial contributor to both parent and child emotion regulation (Fonagy et al., 1991b). Parents with a higher reflective capacity are more likely to have children with secure attachment (Slade, 2005). PRF development is best conceptualized as a multidimensional construct, influenced by both internal and external factors (Luyten et al., 2017b). Specifically, multiple pathways determine parenting outcomes, which compose an individual's unique combination of risk and resiliency factors (Belsky & Vondra, 1989). These pathways include individual, historical, social, and circumstantial factors (Belsky & Vondra, 1989). Even though no one influence is solely responsible for parenting outcomes, there is a lack of research on relationships amongst these variables (Belsky & Vondra, 1989). Childhood maltreatment is a factor that has been shown to impact PRF (Fonagy et al., 1991b). However, not all parents who have a history of ACEs demonstrate compromised parenting abilities (Berthelot et al., 2015, as cited in Ensink et al., 2017). This suggests that differences at the individual level may impact the relationship between histories of maltreatment and parenting (Ensink et al., 2017). An individual's personality characteristics have also been shown to impact parenting (Belsky & Vondra, 1989; Ensink et al., 2017). For example, positive emotions such as joy can play a critical role in building resilience to stressful events (Tugade & Fredrickson, 2007). There is evidence that early adverse experiences can impact an individual's subjective well-being in adulthood (Oshio et al., 2013). Although subjective well-being and DJ are not synonymous, the two constructs are correlated (Robbins et al., 2019). The literature indicates there are relationships among PRF, ACES, and personality characteristics (Ensink et al., 2017; Fonagy et al.,

1991b;Oshio, 2013). There is a need to understand the interaction among these three constructs better.

Based on the critical influence that PRF has on early childhood development and well-being across the lifespan, there is a need to better understand conditions that promote increased PRF. Some parents who have a history of childhood maltreatment demonstrate impaired parenting capacities, while others do not (Berthelot et al., 2015, as cited in Ensink et al., 2017). Based on this finding, there is reason to suspect that a mediating variable, such as DJ, transmits the effect of ACEs on PRF. This study made an original contribution to the existing literature by investigating the relationships among ACEs, DJ, and PRF and whether DJ mediates the relationship between ACEs and PRF.

### **Purpose of the Study**

ACEs, joy, and PRF have been studied extensively in the literature as separate or paired constructs (Felitti et al., 1998; Fonagy et al., 1991; Johnson, 2020). However, to date, no studies have examined how these variables interact with each other. This quantitative study aimed to determine the relationship between ACEs and PRF, ACEs and positive emotions, PRF and DJ, and the mediating effect of DJ on the relationship between ACEs and PRF among parents of children under the age of 6 years.

### **Research Questions and Hypotheses**

RQ<sub>1</sub>: What relationship exists between ACEs, as measured by the cumulative score on the ACE questionnaire, and PRF, as measured by the Parental Reflective Functioning Questionnaire—Interest and Curiosity in Mental States subscale (PRFQ-IC; Luyten et al., 2017b) score?

H<sub>01</sub>: There is no statistically significant correlation between ACEs and PRF.

H<sub>a1</sub>: There is a statistically significant correlation between ACEs and PRF.

RQ<sub>2</sub>: What relationship exists between ACEs, as measured by the cumulative score on the ACE questionnaire, and DJ, as measured by the Joyful Life Scale (JLS; Robbins et al., 2019) score?

H<sub>02</sub>: There is no statistically significant correlation between ACEs and DJ.

H<sub>a2</sub>: There is a statistically significant correlation between ACEs and DJ.

RQ<sub>3</sub>: What relationship exists between PRF, as measured by PRFQ-IC (Luyten et al., 2017b) score, and DJ, as measured by JLS score (Robbins et al., 2019)?

H<sub>03</sub>: There is no statistically significant correlation between PRF and DJ.

H<sub>a3</sub>: There is a statistically significant correlation between PRF and DJ.

RQ<sub>4</sub>: To what extent does DJ, as measured by JLS (Robbins et al., 2019) score, mediate the relationship between ACEs, as measured by cumulative score on the ACE questionnaire, and PRF, as measured by PRFQ-IC score (Luyten et al., 2017b)?

H<sub>04</sub>: DJ does not mediate the relationship between ACEs and PRF.

H<sub>a4</sub>: DJ significantly mediates the relationship between ACEs and PRF.

## Theoretical Framework

The theoretical framework for this study was Tedeschi and Calhoun's (2004) theory of posttraumatic growth (PTG). PTG refers to positive changes that occur following an encounter with trauma (Calhoun et al., 2014). Traumatic events can produce a vast number of positive and negative outcomes for those individuals who endure them. Although the concept of PTG centers on the positive changes that occur following highly stressful circumstances, it is just as important to acknowledge the devastating psychological distress that can result from these experiences. It is common for individuals to experience increased sadness, guilt, anger, or irritability following highly stressful life events (Tedeschi & Calhoun, 2004). Although the psychological reactions to trauma are often unpleasant, there is a common belief that human suffering serves as a catalyst for positive growth, suggesting that distress and growth can coexist (Tedeschi & Calhoun, 2004). The concept of PTG specifically relates to positive growth in at least some areas and not just the resolution of distress and a return to an individual's pretrauma baseline functioning (Tedeschi & Calhoun, 2004). The concept of positive growth following traumatic experiences can be observed in parenting. Childhood maltreatment is a factor that has been shown to impact PRF (Fonagy et al., 1991b). However, not all parents who have a history of ACEs demonstrate compromised parenting abilities (Berthelot et al., 2015, as cited in Ensink et al., 2017). This discrepancy in parenting outcomes demonstrates a need to better understand factors that promote growth following early adversity instead of the development of maladaptive behaviors. The process of PTG is a dynamic and ongoing process that is strongly reliant on the individual's unique cognitive assets (Tedeschi & Calhoun, 2004). For example, personality characteristics

have been shown to impact parenting practices (Belsky & Vondra, 1989; Ensink et al., 2017) and build resilience to stressful events (Tugade & Fredrickson, 2007). Identifying the relationships between ACEs, DJ, and PRF will provide insight into how to support positive parenting outcomes. A more thorough explanation of PTG and its connection to the present study is provided in Chapter 2.

### **Nature of the Study**

This study used a quantitative, nonexperimental, survey research design. Mediation analysis using multiple linear regression was used because the variables, ACEs, DJ, and PRF, can be objectively and numerically measured using validated instruments (Cox, 2016a). A mediation analysis using multiple linear regression examined relationships between variables (Baron & Kenny, 1986). Specifically, this analysis method was used to determine if DJ is a mediating variable and transmitted the effect of ACEs on PRF. This study used a nonexperimental design because none of the variables were manipulated (Cox, 2016a). This study focused on DJ as a mediator in the relationship between the independent and dependent variables, ACEs and PRF, respectively. These data were collected using a self-administered web-based demographic questionnaire and three instruments. Specifically, the survey included a demographic questionnaire, the ACE questionnaire to determine the participant's cumulative number of ACEs, the JLS score to measure DJ, and the PRFQ-IC to measure PRF. Although the PRFQ consists of three subscales, the Interest and Curiosity in Mental States subscale (PRFQ-IC) was the variable of focus for this study. The IC subscale is designed to measure a parent's ability to consider the motivation behind a child's behavior based on the child's mental processes and not those of the parent (Luyten et al., 2017a).

Recognizing the opacity of mental states and showing sincere interest in the internal experience of the child are distinct features of genuine RF (Slade, 2005). This study included parents who were at least 18 years old and were current primary caregivers for one or more children under the age of 6 years. I used a convenience sample by inviting participation through various social media platforms. Data were analyzed using Statistical Package for the Social Sciences (SPSS) Version 28 software.

### **Definitions**

The following were used as operational definitions of terms in this study:

*Adverse childhood experiences (ACEs)*: Stressful and potentially traumatic events that occur to a child before the age of 18 years (Felitti et al., 1998). Traditionally, the concept of ACEs has been associated with several specific categories of childhood abuse identified by Felitti et al. (1998), which include emotional abuse, sexual abuse, physical abuse, exposure to substance abuse, mental illness, violent treatment of a caregiver, and criminal behavior. ACEs are also used to refer to additional conditions of childhood maltreatment that are known to negatively impact development, which may include exposure to school violence, community violence, traumatic separation, and natural disasters (Greeson et al., 2014).

*Attachment*: Rooted in Bowlby's (1969) attachment theory, attachment broadly refers to the enduring emotional bond between an infant and their caregiver.

*Dispositional joy (DJ)*: Refers to a personality trait characterized by unconditional joy and the ability to find joy despite life circumstances (Robbins et al., 2019). Joy as a

dispositional state refers to the tendency to have a lower threshold for experiencing joy, experiencing joy more often, and finding joy in more things (Johnson, 2020).

*Parent:* In the context of this study, the term *parent* is used to refer to any adult who is a primary caregiver for a child. This category may include biological relatives (e.g., mother, father, grandparent, aunt, uncle) and nonbiological caregivers (e.g., adoptive parent, foster parent). Research supports the belief that RF first develops within the context of attachment relationships (Luyten et al., 2017b). Foundational attachment theorist Bowlby (1969) deferred to the term *attachment figure* in recognition that although biological mothers have historically been the primary attachment figure, other important adults can serve as a child's attachment figure.

*Parental reflective functioning (PRF):* Refers to a parent's ability to understand their own mental state, recognize how their mental state differs from that of their child, and apply this perspective to make meaning of their child's behaviors (Slade, 2005; Slade et al., 2005).

*Secure attachment:* An emotional bond between an infant and their caregiver that is characterized as being harmonious, cooperative, and responsive (Salter Ainsworth et al., 2015). Infants who are securely attached to their attachment figure can use them as a secure base from which to explore unfamiliar environments and be quickly and easily soothed by them (Salter Ainsworth et al., 2015).

### **Assumptions**

Assumptions relate to procedures of a study that are not fully within the researcher's control (Crawford et al., 2016). This study used self-reported data as well as retrospective self-reported data. In this study, it was assumed that participants provided



truthful responses to the questions and that they accurately recalled situations that influenced their responses. It was assumed that ACEs, DJ, and PRF could adequately be measured. Although these assumptions were validated, each of them was necessary to conduct this study and interpret the results.

### **Scope and Delimitations**

Delimitations are factors that can be controlled to reduce potential weaknesses or problems in the study design. For the current study, I recruited parents via social media who were at least 18 years old, who were currently caring for at least one child under the age of 6 years, and who could read English. Survey research relies on respondents to accurately understand what is being asked and answer honestly. This study used a survey that included one demographic questionnaire and three instruments. Inaccuracies may have occurred as the result of intentional or unintentional misreporting of information (Cox, 2016a). The study explored several broad concepts, including parenting behaviors, the theory of PTG (Tedeschi & Calhoun, 2004), ACEs (Felitti et al., 1998), and PRF (Slade, 2005). The current study results only apply to the specific population that met the inclusion criteria by using primary data.

### **Limitations**

Limitations are potential weaknesses or problems in research that cannot be fully controlled and may impact the results or generalizability of a study. There were several limitations to this study. First, this study used a convenience sample recruited through social media. Online survey platforms limit the sample population to those who have access to a computer, the internet, and social media. The survey language was also in English. The use of a convenience sample limited generalization to the sample (Cox,

2016a). Some survey questions were sensitive and may have been potential triggers for distressing memories. This may have posed a challenge for participants to respond truthfully. Honest responding was encouraged through the use of informed consent and guaranteeing participant confidentiality. Participants were provided with national mental health crisis resources at the beginning of the survey in case they needed assistance.

### **Significance**

There is robust research identifying a critical connection between PRF and a secure parent–infant attachment. This research may fill a gap in current literature by examining how individual and historical factors contribute to variations in PRF. Although there is evidence of an association between joy within the context of parenting and positive parenting (Slade, 2005), there is no further investigation of relationships among joy and parenting. Joy can also influence an individual’s subjective meaning of traumatic experiences (Johnson, 2020). This study was unique because it explored the potential influence of joy on ACEs and PRF. This can have positive implications for understanding the development of PRF and ways to promote it. This study has possible positive social change implications. Parenting practices in early childhood serve as the foundation for an individual’s functioning across their lifetime (Ranson & Uricuk, 2008). Identification of factors that promote positive parenting outcomes and PRF can contribute to the development of interventions and legislation that supports early intervention.

### **Summary**

In this chapter, the problem, research questions, and boundaries of the current study were described. The purpose of this quantitative study was to explore the relationship between ACEs, DJ, and PRF and the mediating effect of DJ on the

relationship between ACEs and PRF among parents of young children. Research within this population highlighted the significance of PRF on the development of a secure parent–infant attachment. Moreover, there is increased research interest in understanding factors that promote PRF. Insights into how parents might improve their PRF could be used to promote secure parent–infant attachment and positive parenting outcomes. This study used the PTG theory defined by Calhoun et al. (2014) and the attachment theory defined by Bowlby (1969). Validated questionnaires concerning ACEs, DJ, and PRF were used for the current quantitative analysis, and conclusions were derived from data. Chapter 2 provides a comprehensive review of the literature related to parenting behaviors and ACEs, personality characteristics, and PRF.

## Chapter 2: Literature Review

### Introduction

The purpose of this study was to investigate the relationship between ACEs, DJ, and PRF, and whether DJ mediates the relationship between ACEs and PRF. This chapter begins with a description of the PTG theory developed by Tedeschi and Calhoun (1996, 2004), followed by a discussion of research on parent–child attachment, PRF, ACEs, and DJ.

### Literature Search Strategy

I used the following internet databases to search peer-reviewed literature: PsycINFO, PsycArticles, PubMed, ProQuest Dissertations, ProQuest Central, ScienceDirect, and various online journals. I also used references within sources and articles by the same author(s), when applicable. Search terms included *parental reflective functioning*, *adverse childhood experiences (ACEs)*, *posttraumatic growth*, *personality*, *parenting*, *dispositional joy*, and *attachment*. Literature related to foundational research (e.g., Fonagy et al., 1991; Tedeschi & Calhoun, 1996) was not date restricted. I limited all other searches to the last 11 years (2010 to present). I also reviewed many approved dissertations for form and layout.

### Theoretical Foundation: Posttraumatic Growth Theory

#### Background of Posttraumatic Growth

The *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-V; American Psychiatric Association, 2013) describes a traumatic event as a situation during which an individual directly experiences, witnesses, or learns of actual or threatened death, serious injury, or sexual violence. Traumatic events can produce a vast

number of positive and negative outcomes for those individuals who endure them. Although the concept of PTG centers on the positive changes that occur following highly stressful circumstances, it is just as important to acknowledge the devastating psychological distress that can result from these experiences. It is common for individuals to experience increased sadness, guilt, anger, or irritability following highly stressful life events (Tedeschi & Calhoun, 2004). Some experience more pervasive problems, such as cognitive distortions, physical reactions, or the development of posttraumatic stress disorder (Tedeschi & Calhoun, 2004). Posttraumatic stress disorder is characterized by symptoms such as intrusive thoughts or memories, dissociation, avoidance or reminders, changes in cognitions or mood, and alterations in arousal (American Psychiatric Association, 2013). The negative consequences of traumatic events have taken a more prominent focus over positive changes for clinicians and researchers due to the subsequent dysfunction that individuals face (Tedeschi & Calhoun, 2004). Although the psychological reactions to trauma are often unpleasant, there is a common belief that human suffering serves as a catalyst for positive growth, suggesting that distress and growth can coexist (Tedeschi & Calhoun, 2004). The concept of PTG specifically relates to positive growth in at least some areas and not just the resolution of distress and return to an individual's pretrauma baseline functioning (Tedeschi & Calhoun, 2004). This is an important way in which PTG is distinctly different from other related concepts, such as resilience. Resiliency encompasses elements of resistance and adaptation to manage adverse conditions, whereas PTG is a transformative process (Tedeschi & Calhoun, 2004). Three broad areas tend to be the focus of PTG: perception of self, relationships with others, and philosophy of life (Tedeschi & Calhoun, 1996).

Individuals may experience a change in the way they understand their own personal characteristics. Overcoming traumatic events can lead to the individual perceiving themselves as being more self-reliant, more self-assured, and psychologically stronger (Tedeschi & Calhoun, 1996). This sense of confidence and strength can be generalizable to other life situations, including future trauma (Tedeschi & Calhoun, 1996). Some individuals report feeling as though highly stressful events brought them emotionally closer to family members and provoked a deeper appreciation for the people in their life (Tedeschi & Calhoun, 1996). They may also acknowledge an increased need to make decisions based on their own best interest (Tedeschi & Calhoun, 1996). This change creates an opportunity for individuals to engage in new behaviors that promote the utilization of appropriate networks and willingness to accept help (Tedeschi & Calhoun, 1996). Finally, individuals may also experience a change in the beliefs and schemas they use to make sense of the world, including an increased appreciation for their own existence, a positive outlook on life, and strengthened religious or spiritual commitment (Tedeschi & Calhoun, 1996).

### **Process of Posttraumatic Growth**

PTG does not occur as the direct result of traumatic experiences. Rather, it is a dynamic and ongoing process that is strongly reliant on the individual's unique cognitive assets. The starting point is an individual's pretrauma worldview (Tedeschi & Calhoun, 2004). This includes the assumptions, beliefs, schemas, or paradigms used to provide the individual with meaning and purpose (Tedeschi & Calhoun, 2004). Traumatic events can pose a severe challenge to the way the individual makes sense of the world (Tedeschi & Calhoun, 2004). They may find that the traumatic circumstances clash with the

foundational components of their worldview, which forces the individual to undergo cognitive restructuring (Tedeschi & Calhoun, 2004). This is a formative way in which traumatic events differ from general life stressors. Life stressors may also be somewhat unpleasant but do not fracture the cognitive scaffolding used to maneuver life or produce conditions that trigger growth. Individuals' struggle following a traumatic event creates an opportunity for cognitive reprocessing to occur and subsequently conditions for positive growth. Cognitive reprocessing often requires an extensive amount of time and can be seen as an ongoing process, which supports the notion that PTG is also an ongoing process and an outcome (Tedeschi & Calhoun, 2004).

### **Influences on Posttraumatic Growth**

Internal conditions are a major determinant of an individual's response to traumatic events. Specifically, personality and emotion management are identified as key contributors to growth (Tedeschi & Calhoun, 2004). The initial validation study of the Posttraumatic Growth Inventory (PTGI) developed by Tedeschi and Calhoun (1996) to measure key elements of PTG identified two core personality qualities that likely affect the probability of individuals generating positive outcomes from traumatic experiences (Tedeschi & Calhoun, 2004). Extraversion and openness to experience, as measured by Costa and McCrae's (1992) NEO Personality Inventory, were shown to be modestly related to PTG. There is evidence that significant stressful events, such as bereavement, do not produce long-term changes to personality (McCrae & Costa, 1988). This supports the suggestion that the specific personality traits contribute to PTG and are not just the product of experiencing trauma. The second personal asset that aids in PTG is emotion management and coping strategies (Tedeschi & Calhoun, 2004). Immediately following

traumatic events, there is often a need to manage intense distress, and cognitive processes are more likely to be automatic than formulated, which can include intrusive thoughts and negative rumination (Tedeschi & Calhoun, 2004). Although this can be a time consuming process, it can result in the abandonment of pretrauma beliefs and goals, which creates room for growth (Tedeschi & Calhoun, 2004). Psychological distress is an important part of continued cognitive processing (Tedeschi & Calhoun, 2004). External conditions have the potential to contribute to PTG. Receiving emotional support from enduring relationships can aid individuals in forming and integrating new perspectives and beliefs (Tedeschi & Calhoun, 2004). Many other factors have been identified as potential influences on PTG, including optimism, spirituality, and adaptive coping strategies (Ramos & Leal, 2013). However, many empirical studies have indicated contradictory results, necessitating further evaluation of relationships among the variables (Ramos & Leal, 2013).

### **Posttraumatic Growth and Parenting**

The theory of PTG aligns with the goal of this study to understand the relationship among ACEs, DJ, and PRF. Childhood maltreatment is a serious risk factor for negative parenting outcomes, including poor PRF (Fonagy et al., 1993). However, not all parents who have a history of ACEs demonstrate compromised parenting abilities (Berthelot et al., 2015, as cited in Ensink et al., 2017). Individuals who are unable to cope with the painful memories of past maltreatment are more likely to struggle with poor PRF (Fonagy et al., 1993). In contrast, parents who cannot adequately mentalize about their own history of traumatic events are more able to be sensitive to the risk of engaging in frightening interactions with their child (Camoirano, 2017). These findings in parenting



practices align with the PTG framework, which suggests that traumatic events can prompt a shift in the individual's assumptions, beliefs, schemas, or paradigms that are used to make meaning of the world (Tedeschi & Calhoun, 2004). Additionally, there is evidence that an individual's personality characteristics impact how they make meaning of traumatic events (Costa & McCrae, 1992) and their parenting practices (Belsky & Vondra, 1989; Ensink et al., 2017). The literature supported the appropriateness of using the PTG framework to guide the present research study.

### **Child Maltreatment and Adverse Childhood Experiences**

Childhood trauma, child maltreatment, and ACEs often refer to the same broad set of circumstances. Felitti et al. (1998) conducted one of the most notable studies evaluating the relationship between ACEs and health risk behavior and disease in adulthood. The researchers identified the most common ACEs based on a population of obese, predominantly White middle-class adults, all of whom had high-end medical insurance (Felitti et al., 1998). The 10 ACEs identified by Felitti et al. (1998) included emotional abuse, sexual abuse, physical abuse, exposure to substance abuse, mental illness, violent treatment of a caregiver, and criminal behavior. Surveys asking about these common ACEs were mailed to more than 13,000 patients who received medical care from a large health maintenance organization (Felitti et al., 1998). This landmark retrospective study demonstrated a strong link between ACEs and negative health outcomes in adulthood. The association between ACEs and negative health outcomes in adulthood has been replicated in more general community-based samples (Iniguez & Stankowski, 2016). There is clear evidence that children are impacted by a vast number of adverse conditions that are not encompassed by the original 10 core ACEs (Greeson et

al., 2014). For example, school violence, community violence, traumatic separation, and natural disasters were also found to be linked to increased risk for negative health outcomes (Greeson et al., 2014). Despite the increased attention toward ACES and the recognition of negative consequences, the problem persists. The Centers for Disease Control and Prevention (2021) indicated that an estimated 61% of adults in the United States reported experiencing at least one ACE, and as many as one in six reported experiencing four or more ACEs. The continued high rate of reported ACEs in the population highlights the critical need to intervene before childhood trauma occurs. Research indicates that mothers who have a higher number of ACEs also have children who have a higher number of ACEs (Narayan et al., 2017). Identifying parenting factors that contribute to and interrupt the intergenerational transmission of trauma can be an efficacious way to prevent ACEs from occurring (McDonnell & Valentino, 2016).

### **Adverse Childhood Experiences and Parenting**

Parents who have a history of maltreatment in childhood face an increased risk for challenges in parenting and negative parenting outcomes (Bailey et al., 2012; Kolomeyer et al., 2016). Additionally, Lange et al. (2019) found that higher numbers of ACEs were associated with higher levels of parenting stress. Parenting outcomes are often conceptualized as emotional or behavioral measures. For example, sensitive caregiving behavior is a critical determinant of secure attachment in infancy (Salter Ainsworth et al., 2015). However, mothers who have experienced childhood maltreatment may engage in withdrawn, avoidant, and hostile parenting behaviors (Enlow et al., 2011). A key emotional aspect of parenting is RF, which references a caregiver's ability to understand the mental functioning of their child and how it differs from their own experience

(Fonagy et al., 1991a). There is evidence that there is a negative relationship between various forms of early maltreatment and PRF (Håkansson, 2018). Bailey et al. (2012) evaluated the association between self-reported and observed parenting outcomes in a sample of mothers with a history of childhood maltreatment. The results indicated that mothers who reported a history of experiencing childhood neglect, emotional maltreatment, and witnessing family violence demonstrated signs of hostility in interactions with their children, including expressed impatience and frustration (Bailey et al., 2012). A reported history of sexual and physical abuse in childhood was not found to be associated with any differences in observed parent–child interactions (Bailey et al., 2012). Additionally, a history of sexual and physical abuse was not associated with observed emotional availability. In contrast, parent self-report measures indicated an association between mothers with a history of childhood sexual abuse and a perceived lack of parenting competence (Bailey et al., 2012). This link was unique to a childhood history of sexual abuse and not replicated with other forms of maltreatment (Bailey et al., 2012). These results suggest that the type of childhood maltreatment can influence how negative parenting outcomes manifest (Bailey et al., 2012).

### **Parental Reflective Functioning**

There is robust evidence that PRF is strongly associated with adequate caregiving behaviors and a child’s attachment security (Camoirano, 2017; Luyten et al., 2017b; Slade, 2005). RF and PRF are related but differ in their function. RF typically refers to an individual’s understanding of their own internal state, including their intentions, feelings, thoughts, wants, needs, and beliefs (Slade, 2005). This information is not just used to enhance self-understanding. Rather, it becomes the foundation for a representational

system that is used to navigate interpersonal relationships (Slade, 2005). RF allows people to make sense of each other and anticipate behaviors (Slade, 2005). RF is believed to develop through the context of attachment relationships during early childhood (Camoirano, 2017). PRF refers to a parent's ability to understand their own mental state, the mental state of their child, and the impact of those mental states on behavior (Slade, 2005; Slade et al., 2005). Impairments in PRF can present in the forms of prementalizing and hypermentalizing (Luyten et al., 2017b). Both hypermentalizing and prementalizing are associated with parents who have a history of insecure attachment (Luyten et al., 2017b). Parents who engage in prementalizing fail to show genuine interest in and curiosity about their child's mental state and, as a result, demonstrate a lack of consideration for their child's subjective experience (Luyten et al., 2017b). Parents who hypermentalize tend to be overly confident about their child's mental state, which can contribute to intrusive parenting behaviors (Luyten et al., 2017b). This may also include inaccurate interpretation of a child's intentions (Luyten et al., 2017b). For example, a parent who engages in hypermentalizing may perceive a young child throwing a rattle toy as intentionally trying to break the toy or harm the parent. Parents' misaligned developmental expectations can also contribute to excessive or deficient reflection of the child's mental functioning (Luyten et al., 2017b). This can be observed through parent beliefs that children may be too young to feel or think anything or attributing improbable mental states to children (Luyten et al., 2017b).

### **Pathways for Parental Reflective Functioning**

Childhood maltreatment is a condition that has been shown to impact PRF (Fonagy et al., 1991b). However, not all parents who have a history of ACEs demonstrate

compromised parenting abilities (Berthelot et al., 2015, as cited in Ensink et al., 2017). This suggests that there may be differences at the individual level that impact the relationship between histories of maltreatment and parenting (Ensink et al., 2017). PRF development is best conceptualized as a multidimensional construct, influenced by internal and external factors (Luyten et al., 2017b), along with an individual's unique combination of risk and resiliency factors (Belsky & Vondra, 1989). Individual determinants of PRF can include parent attachment style (Luyten et al., 2017b), emotion regulation (Fonagy & Target, 1997), and personality (Belsky & Vondra, 1989; Ensink et al., 2017).

### **Attachment**

PRF is a significant predictor of infant attachment patterns (Fonagy et al., 1991a). Activation of an infant's attachment behavior system seeks to maintain close proximity to important caregivers (Bowlby, 1969). The infant can achieve this by utilizing signaling behaviors, such as smiling or crying (Bowlby, 1969). John Bowlby's (1969) attachment theory emphasizes the critical role of caregivers in an infant's development of secure attachment. Variations in attachment behaviors are partly the result of influences that both mother and baby bring to the relationship and impose on each other (Bowlby, 1969). Just as the baby's tendencies influence the mother's response, characteristics of the mother shape the baby's reaction to her. This intricate relational pattern makes it difficult to differentiate between the mother's influences and the influences of the baby. There is clear differentiation in the development between infants whose mothers were responsive to them and those who were less so. The mother may react to her own tendencies by withdrawing from social advances initiated by the baby or by being encouraged by them.

The mother's behavior toward the child is largely the result of how early interactions with the child confirm, modify, or enhance her initial beliefs. By the time a child turns 1 year old, initiations of parent-child social interactions are more significantly influenced by the mother (Bowlby, 1969). The important role that parents play in infant attachment suggests the need to further understand specific characteristics held by the parent. One such characteristic that can impact parent responsiveness to the child is parental reflective capacity. PRF drastically impacts the parent's ability to accurately interpret the child's mental state (Fonagy et al., 1991b). Slade (2005) found that parents with a higher reflective capacity are more likely to have children with secure attachment.

### **Attachment Style**

Mary Ainsworth is most often associated with the strange situation studies and is credited with identifying different attachment styles and behaviors. The strange situation is a research protocol used to conduct a structured observation of parent-child interactions (Salter Ainsworth et al., 2015). The data collected from these observations were used to classify parent-infant attachment quality into three groups: avoidant (group A), secure (group B), and ambivalent-resistant (group C; Salter Ainsworth et al., 2015). Secure attachment is characterized by more positive interactions between the dyad than the other classification groups (Salter Ainsworth et al., 2015). The interactions are described as harmonious, cooperative, and responsive (Salter Ainsworth et al., 2015). Infants who are securely attached to their mother were able to use her as a secure base from which to explore unfamiliar environments (Salter Ainsworth et al., 2015). Additionally, infants with secure attachment can be quickly and easily soothed by their attachment figure following activation of the attachment system by periods of stress or need (Salter

Ainsworth et al., 2015). The ambivalent-resistant attachment classification can be described as misaligned, anxious, and, at times, resentful (Salter Ainsworth et al., 2015). Parent-child interactions are not rejecting or neglectful, but often lack synchronized communication (Salter Ainsworth et al., 2015). When the caregiver does not respond in the way desired by the infant, the child's reaction may appear angry and resentful (Salter Ainsworth et al., 2015). Infants with ambivalent-resistant attachment tend to respond to caregiver separation with immediate, intense activation and are slow to soothe upon reunification (Salter Ainsworth et al., 2015). Avoidant attachment is characterized by a lack of responsiveness, hostility, and rejection (Salter Ainsworth et al., 2015). Mothers of this dyad may display frightening behaviors or be overtly angered by the infant's demands (Salter Ainsworth et al., 2015). Much like infants with an ambivalent-resistant attachment, babies who have avoidant attachment often demonstrate separation anxiety and cry more frequently (Salter Ainsworth et al., 2015). The most notable difference in infant behaviors between these two attachment styles is evident upon reunification with caregivers. Following a separation, infants who have an ambivalent attachment may avert their gaze or initially approach their attachment figure and then abruptly turn away, which in turn discourages interaction (Salter Ainsworth et al., 2015). Early attachment patterns significantly influence future relationships, subjective sense of well-being, and mental health (Fearon, 2017). Secure attachment in infancy can contribute to future benefits, such as increased emotion, regulation capacity, and better navigation of the social world (Fearon, 2017). In contrast, research has consistently identified an association between insecure attachment and peer relationship difficulties and problems with externalizing behaviors (Fearon, 2017). Adult attachment style can also influence

parenting behaviors and outcomes. Parents with high levels of insecure attachment demonstrate impaired RF within emotionally tolling relationships, such as the parent-child relationship (Luyten et al., 2017b). As a result, parents may fail to adequately consider the child's emotional experience in general, become intrusive and negate to consider how the emotional experience of their child differs from their own state, or distort the child's intentions in a negative way (Luyten et al., 2017b). In contrast, Slade et al. (2005) found that mothers who were classified as having secure attachment during pregnancy demonstrated higher levels of RF when their child was 10 months old.

### **Emotion Regulation**

Emotion regulation refers to an individual's attempts to control the types of emotions they experience, when they feel these emotions, the intensity of these emotions, and how the emotions are expressed (Gross, 1998). Emotion regulation can be conceptualized as both an ongoing process and a reaction (Cole et al., 1994). The ongoing process of emotion regulation integrates both patterns that an individual has developed across their lifespan and also the situation they are presented within the moment (Cole et al., 1994). Regulated emotion within the context of a reaction represents an individual's ability to respond to external stimuli in a healthy, adaptive way (Cole et al., 1994). Emotion regulation ability can profoundly impact an individual's functioning across all domains, including parenting (Carreras et al., 2019) and sense of well-being (Balzarotti et al., 2016).

An overwhelming majority of prior research has focused on the regulation of negative emotions; however, individuals do engage in positive emotion regulation (Tugade & Fredrickson, 2007). Livingstone and Srivastava (2012) identified strategies



individuals use to promote positive emotions by surveying 109 undergraduate students. They found three common categories of positive emotion regulation: engagement, betterment, and indulgence (Livingstone & Srivastava, 2012). Engagement refers to the individual's efforts to seek out positive situations and people (Livingstone & Srivastava, 2012). This can include a wide range of actions, such as savoring positive moments, anticipating positive events, choosing to share positive emotions, and socializing with positive people (Livingstone & Srivastava, 2012). This strategy draws on an individual's attentional control to bring attention to positive situations around them and their ability to engage in the positive appraisal of the events around them (Livingstone & Srivastava, 2012). The term betterment is used to describe the efforts people make to improve their situation and develop a positive future (Livingstone & Srivastava, 2012). This can occur through goal-directed actions and participation in religious activities (Livingstone & Srivastava, 2012). Betterment as an isolated strategy is not associated with long-term positive emotions or subjective well-being (Livingstone & Srivastava, 2012). The overall benefits of betterment can be seen in a strong sense of purpose in life and is associated with emotions, such as pride (Livingstone & Srivastava, 2012). The concept of indulgence focuses on momentary pleasure, fun-seeking actions, or fantasizing (Livingstone & Srivastava, 2012). When controlling for engagement and betterment strategies, indulgence is associated with an increase in both negative and positive emotions (Livingstone & Srivastava, 2012). This may be the result of short-term positive emotions but a failure to build long-term cognitive resources (Livingstone & Srivastava, 2012).

## **Emotion Regulation and Parenting**

There is evidence that parental emotion regulation is a critical component of adaptive caregiving (Rutherford et al., 2015). Infants rely primarily on nonverbal cues to signal their needs and distress, which most often is crying (Carreras et al., 2019).

Attending to their child's demands sensitively and appropriately requires parents to regulate their own emotional state (Carreras et al., 2019). Sensitive caregiving refers to a parent's capacity to accurately read their child's cues and respond promptly and positively (Salter Ainsworth et al., 2015). Sensitive caregiving is a critical contributor to the development of secure parent-child attachment (Salter Ainsworth et al., 2015).

Emotion regulation is strongly related to sensitive parenting (Carreras et al., 2019).

Research also shows a significant connection between parental emotion regulation and PRF. Schultheis et al. (2019) investigated the relationship between a parent's ability to adjust emotions and their RF. They found that parents who suppressed their emotions and had more difficulty regulating their emotions engaged in less mentalizing about their child (Schultheis et al., 2019). Additionally, parents with poorer emotional awareness demonstrated less interest and curiosity about their child's mental state (Schultheis et al., 2019). These findings align with those in Rutherford et al. (2013), which studied the relationship between PRF and persistence in efforts to soothe an inconsolable baby simulator (BSIM). In this study, participants completed the parental reflective functioning questionnaire (PRFQ), and the researchers measured the amount of time spent attempting to soothe the BSIM (Rutherford et al., 2013). They found a correlation between PRF and persistence times in soothing attempts (Rutherford et al., 2013). Specifically, higher levels of RF were found to be associated with longer persistence in attempting to soothe

the BSIM (Rutherford et al., 2013). Most notably, the researchers found that there was a positive relationship between the interest and curiosity subscale of the PRFQ and increased persistence times (Rutherford et al., 2013). Curiosity and interest in a child's mental state are key aspects of PRF (Slade, 2005).

### **Subjective Well-Being and Positive Emotions**

Subjective well-being is often conceptualized as consisting of two core components: the presence of positive emotions, like joy and happiness, and the absence of negative emotions, such as anxiety and depression (Busseri & Sadava, 2011). There is growing evidence that external conditions explain very little variability in individuals' sense of subjective well-being. Instead, internal conditions, such as emotion regulation strategies, cognitive resources, and personality characteristics, have become the focus of research seeking to understand differences in subjective well-being (Kobylińska et al., 2020). Extrema et al. (2020) found that the use of positive regulation strategies, such as positive refocusing and positive reappraisal, is positively and significantly associated with subjective well-being. On the other hand, negative emotion regulation strategies, like self-blame and catastrophizing, were found to be negatively and significantly associated with subjective well-being (Extrema et al., 2020). There are numerous factors that contribute to the emotion regulation strategies individuals choose to use. Ortner et al. (2017) found that the more individuals believe that an adaptive coping strategy is going to benefit them over a maladaptive strategy, the more likely they were to choose an adaptive emotion regulation strategy over a maladaptive strategy. Perspective-taking is also identified as a mental resource that is associated with subjective well-being (Choi et al., 2016). Specifically, Choi et al. (2016) found that subjective well-being is positively

predicted by perspective-taking and negatively predicted by personal distress. The researchers speculate that subjective well-being and perspective-taking may be related based on their common reliance on cognitive efforts to regulate emotions and behavior (Choi et al., 2016). Perspective-taking and PRF share some common elements.

Perspective-taking requires an individual to suppress their own perception to recognize the views of others, which helps them control behavioral impulses (Choi et al., 2016).

This is similar to the way in which PRF requires caregivers to recognize how their mental functioning differs from that of their child's and how that impacts behavior (Slade, 2005; Slade et al., 2005).

Stressful life events can produce short- and long-term effects on an individual's subjective sense of well-being (Luhmann et al., 2012). An overwhelming body of research has shown that early adverse experiences can impact an individual's subjective well-being in adulthood (Oshio et al., 2013). Specifically, there appears to be an inverse relationship between stressful life events and subjective life satisfaction (Ng et al., 2018). Brodski and Hutz (2012) found that in addition to negatively impacting subjective well-being, individuals who reported memories of emotional abuse in childhood demonstrated higher levels of negative affect and lower levels of positive affect. Although subjective well-being and DJ are not synonymous, the two constructs are correlated (Robbins et al., 2019).

Positive emotions, such as joy, can play a critical role in building resilience to stressful events (Tugade & Fredrickson, 2007). Joy can be described as both an emotion and as a dispositional state (Johnson, 2019). As an emotion, joy is a pleasant state that involves experiencing feelings of effortless, ease, happiness, and safety (Johnson, 2020).

Historically, there has been a perception that joy and negative emotional states, such as depression, could not coexist (Johnson, 2020). However, there is evidence that it is possible for individuals to experience both positive and negative emotional experiences simultaneously (Aragón, 2017). As a result, there has been a shift in viewing joy as a mixed emotion (Johnson, 2020). Joy as a dispositional state refers to the tendency to have a lower threshold for experiencing joy, experiencing joy more often, and finding joy in more things (Johnson, 2020). It can also describe a predisposition to finding joy despite life circumstances (Robbins et al., 2019). There is growing interest in how dispositional differences impact individuals' responses to life events. Helper and Albarracín (2013) developed the Dispositional Attitude Measure (DAM) to evaluate how individuals differ in their dispositional tendency to have negative or positive attitudes. They found DAM scores to be positively correlated with positive affect traits and curiosity-related traits and negatively correlated with negative affective traits (Helper & Albarracín, 2013). This suggests that individuals display an overall inclination to respond in a negatively or positively way regardless of what stimuli are presented. Similarly, Peters et al. (2015) found that individuals who had higher levels of dispositional optimism demonstrated an increased attentional preference for faces showing positive emotions and spent less time looking at angry faces. An attentional bias for positive stimuli can help protect individuals against negative thoughts and activate positive cognitive schemas (Peters et al., 2015).

### **Personality Characteristics and Parenting**

A parent's personality characteristics can influence parenting outcomes (Belsky & Vondra, 1989). There has been growing interest in how both the "big five" personality

factors and specific personality characteristics impact parenting behaviors. Bornstein et al. (2011) used the five-factor model of personality to evaluate the impact of specific personality traits on parenting cognitions and practices. Openness to Experience was found to be associated with the most positive parenting qualities (Bornstein et al., 2011). It was noted to be related to parenting knowledge, parent-reported competence and investment in parenting, reports of behaviors that promote shared attention with their children, and symbolic play (Bornstein et al., 2011). Specific personality characteristics can also contribute to parenting behaviors. Ensink et al. (2017) investigated how mothers who engaged in insensitive and disconnected interactions with their infants differ in terms of RF, personality organization, and histories of abuse. For their study, personality organization encompassed three key aspects: integrated representations of self and others, presence of adaptive or maladaptive defense mechanisms, and individual's sense of reality based on their ability to differentiate between self and others and between internal and external stimuli (Ensink et al., 2017). The authors found that mothers with histories of abuse showed difficulties with personality organization (Ensink et al., 2017). Additionally, personality organization was found to be associated with negative and insensitive parenting behaviors, such as intrusiveness, aggression, and maternal withdrawal or neglect (Ensink et al., 2017). There was also evidence that the specific negative parenting behaviors of intrusiveness and aggression were associated with poorer RF (Ensink et al., 2017). More positive parental characteristics, such as subjective well-being, also impact caregiving qualities. Desjardins et al. (2008) examined the relationships among personality, parenting styles, and subjective well-being. The authors specifically focused on the role of the behavioral activation system (BAS) and behavioral

inhibition system (BIS) as personality characteristics (Desjardins et al., 2008). The BIS is associated with more negative personality traits, such as behavioral avoidance and negative affect (Desjardins et al., 2008). In contrast, the BAS is associated with traits such as extroversion and positive affect (Desjardins et al., 2008). The authors found that mothers with high BAS were more likely to demonstrate nurturing behaviors during a challenging situation with their child (Desjardins et al., 2008). Similarly, mothers low in BAS showed more hesitation in approaching their child during a challenging situation and perceived the situation as more emotionally draining (Desjardins et al., 2008). Additionally, mothers high in BAS were more likely to be categorized as having either an authoritative or neglectful parenting style (Desjardins et al., 2008). The authors found that mothers' subjective sense of well-being mediates the relationship between BAS and parenting style (Desjardins et al., 2008). Specifically, parents who reported high BAS and subjective well-being were significantly more likely to engage in authoritative parenting (Desjardins et al., 2008). On the other hand, parents who reported high BAS and low subjective well-being were more much more likely to be neglectful (Desjardins et al., 2008). There is clear evidence that parental personality traits and characteristics contribute to parenting outcomes.

### **Summary**

This chapter provided a detailed description of various factors that impact parenting outcomes. Specifically, a review of the literature focused on relationships among ACEs, positive emotions and subjective well-being, and PRF. PRF is a strong predictor of infant attachment patterns (Fonagy et al., 1991a). Most notably, parents with a higher reflective capacity are more likely to have children with secure attachment

(Slade, 2005). Early parent-child attachment classification has been shown to impact functioning across the life span (Ranson & Uricuk, 2008). The critical role attachment plays in child development supports the need to better understand factors that contribute to the development of PRF and secure parent-child attachment.

ACEs have been shown to negatively impact PRF and subjective well-being. However, the theory of PTG describes how some people find positive growth following traumatic experiences (Tedeschi & Calhoun, 2004). Personality and emotion management have been identified as key contributors to growth following traumatic experiences (Tedeschi & Calhoun, 2004). Similarly, PRF has been found to be positively impacted by certain personality characteristics (Bornstein et al., 2011; Desjardins et al., 2008; Ensink et al., 2017) and emotion regulation (Rutherford et al., 2015; Schultheis et al., 2019). DJ as a personality characteristic is of particular interest due to the important role it plays in building resilience to stressful events (Tugade & Fredrickson, 2007). The literature clearly identifies relationships amongst PRF, personality characteristics, and ACEs. However, there is a need to understand the interaction among these three constructs together. Chapter 3 includes descriptions of the research design and rationale, sampling procedures, measures, and data analysis strategy. Additionally, Chapter 3 describes concerns related to validity and ethical procedures for participant and data treatment.



## Chapter 3: Research Method

### **Introduction**

This study was designed to measure and examine the mediating effect of DJ on the relationship between ACEs and PRF among current parents of children under the age of 6 years old in the general population. The study results may assist in the development of interventions that can develop PRF and support secure parent–child attachment.

In this chapter, I discuss the research design and rationale, variables used in the study, research questions and hypotheses, population and sampling procedures, instruments used to measure variables, data analysis strategy, possible threats to validity, and ethical procedures.

### **Research Design and Rationale**

This research study focused on the relationships between the independent variable (ACEs), the dependent variable (PRF), and the mediating effect of DJ. I used various social media platforms, including Twitter, Facebook, and Reddit, to invite participants to complete a survey. The survey included a series of demographic questions, the Adverse Childhood Experience (ACE) questionnaire, the Joyful Life Scale (JLS), and the Parental Reflective Functioning Questionnaire (PRFQ). The versatility of survey research makes this methodology popular in many disciplines within the social and behavioral disciplines (Cox, 2016b). Self-administered web-based questionnaires are often faster and less costly to administer than other forms of data collection (Cox, 2016b). The present research study involved a nonexperimental, quantitative approach with a mediational analysis. A quantitative approach to research is appropriate for examining the relationship among measured variables (Creswell, 2014). The correlational design is an effective way to

measure the extent of the association between variables, applying the statistical procedures of mediation analysis (Baron & Kenny, 1986). A mediation model is useful once a relationship between an independent and dependent variable is established. There is a benefit in explaining why or how the two variables are related (MacKinnon, 2017).

### **Research Questions and Hypotheses**

The following research questions and associated hypotheses were a guide for this quantitative study:

RQ<sub>1</sub>: What relationship exists between adverse childhood experiences (ACEs), as measured by the cumulative score on the ACE questionnaire, and parental reflective functioning (PRF), as measured by the Parental Reflective Functioning Questionnaire—Interest and Curiosity in Mental States subscale (PRFQ-IC; Luyten et al., 2017b) score?

H<sub>01</sub>: There is no statistically significant correlation between ACEs and PRF.

H<sub>a1</sub>: There is a statistically significant correlation between ACEs and PRF.

RQ<sub>2</sub>: What relationship exists between ACEs, as measured by the cumulative score on the ACE questionnaire, and dispositional joy (DJ), as measured by the Joyful Life Scale (JLS; Robbins et al., 2019) score?

H<sub>02</sub>: There is no statistically significant correlation between ACEs and DJ.

H<sub>a2</sub>: There is a statistically significant correlation between ACEs and DJ.

RQ<sub>3</sub>: What relationship exists between PRF, as measured by PRFQ-IC (Luyten et al., 2017b) score, and DJ, as measured by JLS score (Robbins et al., 2019)?

H<sub>03</sub>: There is no statistically significant correlation between PRF and DJ.

H<sub>a3</sub>: There is a statistically significant correlation between PRF and DJ.

RQ<sub>4</sub>: To what extent does DJ, as measured by JLS (Robbins et al., 2019) score, mediate the relationship between ACEs, as measured by cumulative score on the ACE questionnaire, and PRF, as measured by PRFQ-IC score (Luyten et al., 2017b)?

H<sub>04</sub>: DJ does not mediate the relationship between ACEs and PRF.

H<sub>a4</sub>: DJ significantly mediates the relationship between ACEs and PRF.

## **Methodology**

### **Population**

Respondents included caregivers who were currently caring for one or more children under the age of 6 years. The stipulation for caregivers to have at least one child under the age of 6 years was based on the PRFQ's intended use for parents of children 0 through 5 years of age (Luyten et al., 2017b). These respondents participated in the study through the online completion of a survey, which included a demographic questionnaire and three instruments. The population for this study was adult social media users representing various sociodemographic groups.

## **Sampling and Sampling Procedures**

I used a nonprobability convenience sample for this study. Weaknesses of nonprobability convenience sampling include the fact that not every member of a population has an equal chance of being included. There is potential that the sample lacks the representativeness of a population (Cox, 2016a). Convenience sampling was used because probability sampling was not feasible for the intended study population. The sample for this study included self-selected individuals from the population who volunteered to participate. All adult social media users above the age of 18 years had an equal opportunity to participate. Social media platforms, including Twitter, Facebook, Instagram, and Reddit, were used to post an invitation to complete a survey for those who met the inclusion criteria. The research study used the Survey Monkey (SurveyMonkey, 2017) online service. Survey Monkey is an online survey service that provides templates for questionnaire development (SurveyMonkey, 2017). This study used the following participant inclusion criteria: above the age of 18 years, living in the United States, fluent in English, and currently a caregiver for one or more children under the age of 6 years. Data collection was dependent on the respondents' answers and the completion of the survey. Respondents who completed all the survey questions were included for hypothesis testing. Incomplete surveys were not included in the data analysis.

### ***Sample Size Justification***

The smallest sample size acceptable for reliable statistical analysis was determined through a power analysis (Green & Macleod, 2016). I conducted a power analysis with G\*Power 3.1 to determine the number of participants needed for this study (Kang, 2021). I used G\*Power for an a priori power analysis of a fixed model linear

multiple regression: fixed model,  $R^2$  deviation from zero. When calculating the G\*Power,  $F$ -test was selected under the test family. Under statistical test, linear multiple regression: fixed model,  $R^2$  deviation from zero was chosen, and a priori compute required sample size given  $\alpha$ , power, and effect size was selected for the power analysis. I elected to use default values alpha level of .05 with an effect size of .15 and a power level of .95 and two predictor variables. Given these conditions, the minimum sample size required for this study was 107 participants.

### **Procedures for Recruitment, Participation, and Data Collection**

Prior to collecting data, I obtained approval from Walden University's Institutional Review Board (IRB). I invited participants via social media platforms, including Facebook, Reddit, Instagram, and Twitter, with the study's description and link to SurveyMonkey, a secure platform for collecting survey data (SurveyMonkey, 2017). All invitations included a description of the study, inclusion criteria, and a link to the survey on SurveyMonkey (see Appendix A). On the first page of the survey, I provided the informed consent, contact information for parties involved with the research study, participant rights, and national resources for mental health crises if the participants became distressed and needed assistance. Individuals were asked to respond to a single (mandatory) item that indicated their consent to participate in the study. Participants who did not provide consent were taken to a "thank you page," while participants who provided consent were directed to the next section of the survey containing the mandatory inclusion criteria questions (see Appendix B). Participants who met the inclusion criteria continued to the remaining sections of the survey containing demographic questions (see Appendix C), the ACE questionnaire (see Appendix D), the

JLS (see Appendix E), and the PRFQ (see Appendix F). The final page of the survey included a statement indicating that the survey was complete and thanking them for their time.

### **Instrumentation and Operationalization of Constructs**

#### **Demographic Items**

The specific demographic items included in SurveyMonkey are presented in Appendix C. Demographic items were included for descriptive purposes of the sample. Items included gender (male, female, nonbinary, other), relationship to the child(ren) (biological parent, adoptive/foster parent, other kinship care, other), caregiver age, number of children currently caring for, household income, and education level. These demographic items are consistent with those gathered in existing studies on similar topics (Carreras et al., 2019).

#### **Adverse Childhood Experiences Questionnaire**

The ACE questionnaire was developed by Felitti et al. (1998) to measure the number and type of ACEs that individuals have experienced across their lifespan. The questionnaire consists of 10 self-report items that ask about various types of stressful and potentially traumatic events that the participant experienced before the age of 18 years. Participants indicate whether or not they have experienced the specific type of abuse, and a composite score is determined by totaling the number of items endorsed. Felitti et al. identified items for the questionnaire based on the 10 most common types of abuse reported by a population of obese, predominantly White, middle-class individuals. Specific categories of abuse identified include emotional abuse, sexual abuse, physical abuse, exposure to substance abuse, mental illness, violent treatment of a caregiver, and

criminal behavior (Felitti et al., 1998). The ACE questionnaire has strong internal consistency (Cronbach's  $\alpha = .88$ ; Murphy et al., 2014). Additionally, Murphy et al. (2014) identified an association between ACEs and adults' psychological manifestations of early adversity. Specifically, as the number of ACEs increased, so did the probability of classification as unresolved/cannot classify (U/CC) on the Adult Attachment Interview (AAI; Murphy et al., 2014).

### **Joyful Life Scale**

The JLS was developed by Robbins et al. (2019) to measure a personality trait characterized by unconditional joy. It is based on phenomenological research on the lived experience of joy and the enduring tendency for some individuals to find joy regardless of the circumstances (Robbins et al., 2019). The JLS is a 19 item self-report questionnaire. Participants are asked to choose a Likert-type response ranging from 1 = *strongly disagree* to 7 = *strongly agree*. The JLS has strong internal consistency (Cronbach's  $\alpha = .92$ ; Robbins et al., 2019). Additionally, Robbins et al. (2019) found the JLS to be positively and significantly correlated with other measures of well-being and happiness, such as the Satisfaction with Life Scale ( $r = .58$ ) and the Subjective Happiness Scale ( $r = .77$ ). This supports the validity of using the JLS to measure positive emotions as a personality trait, such as DJ.

### **Parental Reflective Functioning Questionnaire**

The PRFQ was introduced by Luyten et al. (2017b) as a measure of a caregiver's capacity for PRF, which is the adult's ability to reflect on their own internal experiences along with those of the child. The PRFQ was developed based on the perspective that PRF capacities develop within the context of early secure attachments with caregivers

and promote affect regulation, self-control, and healthy interpersonal relationships across the lifespan (Luyten et al., 2017b). It is designed for use with parents of children under the age of 6 years (Luyten et al., 2017b). This age range was selected based on the strong reliance on nonverbal cues for communication between the child and caregiver and the importance of sensitive responding to an infant's emotional cues during this developmental period (Luyten et al., 2017b).

The PRFQ is an 18 item self-report questionnaire. Participants are asked to choose a Likert-type response ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Three subscales are used to measure prementalizing (PM), certainty about mental states (CMS), and interest and curiosity (IC). These subscales are based on the premise that during the developmental period that occurs between birth and age 6, higher levels of PRF are expressed through active interest and curiosity in the child's mental states, which results in a search for understanding (Luyten et al., 2017a). The PM subscale measures the caregiver's ability to be curious and reflective about the child's mental processes. Using Cronbach's alpha, PM was found to have an internal consistency of .70(Luyten et al., 2017a). The CMS subscale was intended to measure the ability to recognize the opacity of mental states. The opacity of mental states refers to the parent's curiosity about mental states, along with the awareness that they can never truly understand the child's mental processes (Luyten et al., 2017a). Scores on this scale can reflect both parents who feel certain that they know what their child is thinking and parents who have no idea what their child is thinking. CMS was found to have good internal consistency ( $\alpha = .82$ ; Luyten et al., 2017a). The IC subscale is designed to measure a parent's ability to consider the motivation behind the child's behavior based on the child's mental processes and not



those of the parent. Cronbach's alpha for IC is .75 (Luyten et al., 2017a). Luyten et al. (2017a) found that both PM and IC are related to infant attachment security and provide support for the validity of the PRFQ. Although the PRFQ consists of three subscales, the PRFQ-IC was the variable of focus for this study. The IC subscale is designed to measure a parent's ability to consider the motivation behind the child's behavior based on the child's mental processes and not those of the parent (Luyten et al., 2017a). Recognizing the opacity of mental states and showing sincere interest in the internal experience of the child are distinct features of genuine RF (Slade, 2005).

### **Data Analysis Plan**

I compiled data into an electronic spreadsheet and analyzed them using the SPSS version 28.

### **Data Cleaning**

The data analysis did not include any responses from individuals who did not provide consent or did not meet inclusion criteria. All participant responses were included in the data analysis, including those collected from incomplete surveys. A total of 162 individuals clicked on the survey link, and 147 individuals provided consent to participate in the survey. A total of 23 participants were removed from the sample due to not meeting inclusion criteria.

### **Demographic Characteristics**

Descriptive statistics were used to analyze the demographic variables in order to access means, frequencies, and other statistical measures necessary to describe the study participants. Participant age and number of children being cared for were described by

identifying means. Participant gender, ethnicity, relationship status, level of education, and employment status were described using frequency data.

### **Assumptions**

Several assumptions of a linear regression must be met. Both the dependent and independent variables should be measured at the continuous level (Weisberg, 2014). There should be a linear relationship between the two variables (Weisberg, 2014). There should be no significant outliers, independence of observations, and homoscedasticity (Weisberg, 2014). Finally, the residuals of the model should be normally distributed (Weisberg, 2014). A mediational analysis relies on several basic assumptions being met: There must be a linear relationship between the independent and dependent variable, a normal distribution is assumed, and homoscedasticity must be met (MacKinnon et al., 2007). The assumption of a relationship between the independent and dependent variables was tested with a linear regression, the assumption of normal distribution was tested using a Q-Q plot, and the assumption of homoscedasticity was tested using scatter plots of residual and predicted values (Williams et al., 2013).

### **Hypotheses 1, 2, and 3**

A negative relationship exists between the ACE composite score and PRFQ-IC score for Hypothesis 1. A negative relationship exists between the ACE composite score and JLS score for Hypothesis 2. A positive relationship exists between the PRFQ-IC score and JLS score for Hypothesis 3. Pearson's  $r$  was used to evaluate these relationships.

#### **Hypothesis 4**

The JLS score will mediate the relationship between the cumulative ACE score and the PRFQ-IC score. In a mediation analysis, the independent variable (ACEs) must first have a relationship with the mediator (DJ), as this relationship indicates the initial part of the mediating effect (MacKinnon, 2017). Mediation analysis also requires that the mediator (DJ) have a relationship with the dependent variable (PRF), as it signifies the second part of the model effect, completing the carry-over effect from the independent variable to mediate the dependent variable (MacKinnon, 2017). To evaluate if DJ mediated the relationship between ACEs and PRF, a hierarchical linear regression was completed (Baron & Kenny, 1986). Warner (2013) states that mediation analysis involves testing the effects of one independent variable (ACEs) on the dependent variable (PRF) through a mediating independent variable (DJ). The following steps were completed to perform the mediation analysis. First, I determined if the causal variable (ACEs) was correlated with the outcome (PRF) by using PRFQ-IC as the criterion variable in a regression analysis and ACE composite score as a predictor variable. This determined if there is an effect that may be mediated (Baron & Kenny, 1986). Second, I determined if the causal variable (ACEs) was correlated with the mediator (DJ) by using JLS score as the criterion variable in the regression analysis and ACE composite score as a predictor. Third, I determined if the mediator (DJ) effected the outcome variable (PRF) by using PRFQ-IC score as the criterion variable in a regression analysis and ACE composite score and JLS score as predictors. Determining a correlation between the mediator and the outcome alone is not sufficient because the mediator and the outcome may be correlated because they are both caused by the causal variable (Baron & Kenny, 1986).

As a result, it was necessary for the causal variable (ACEs) to be controlled in demonstrating the effect of the mediator (DJ) on the outcome variable (PRF; Baron & Kenny, 1986). Finally, I used a multiple regression analysis to determine if DJ completely mediated the relationship between ACEs and PRF. DJ would have completely mediated the effect of ACEs on PRF if controlling for DJ was zero (Baron & Kenny, 1986). If the first three steps were met, but the fourth was not, then a partial mediation would have been indicated (Baron & Kenny, 1986).

### **Threats to Validity**

Validity in quantitative research refers to how accurately the findings reflect the phenomenon under study (Stewart & Hitchcock, 2016). Common threats to validity include history, maturation, instrumentation, testing, selection bias, regression to the mean, social interaction, and attrition (Stewart & Hitchcock, 2016). I took all foreseen precautionary measures to mitigate threats to validity throughout the research process. I asked participants about parenting perspectives and subjectively positive personality traits, which may have resulted in a social desirability response bias (Cox, 2016b). Social desirability refers to the tendency for people to respond in ways that make them appear more positive (Cox, 2016b). Assuring participant anonymity may promote truthful responses and lessen potential threats to validity (Stewart & Hitchcock, 2016).

Additionally, external threats to validity occur when the researcher makes inferences and draws conclusions from the sample data that inaccurately generalize to the greater population (Stewart & Hitchcock, 2016). Threats to external validity were partially minimized by conducting a thorough literature review and comparing new findings with those from existing studies in the literature (Stewart & Hitchcock, 2016).

The use of a convenience sample was a significant threat to validity. As a result, the generalizability of the results is limited to the sample.

### **Ethical Procedures**

Participants in the research study were required to indicate their willingness to participate on a voluntary basis by acknowledging informed consent. Participants indicated their consent by completing a single, required item at the bottom of the IRB-approved consent form. If the participant did not indicate consent, they were not able to proceed to the survey items. Additional information was provided on a participant information page prior to survey access, which included specific details related to the intended use of the data, potential benefits of the research study, possible risks of participation, the right to withdraw from participation at any time, and information for national mental health crisis resources that could be accessed if needed. A general invitation to participate in the survey was offered through social media platforms, including Facebook, Twitter, Reddit, and Instagram. Specific inclusion criteria were clearly identified and participants were asked to answer mandatory inclusion criteria questions prior to survey access to enforce the inclusion criteria. Participants were asked for general demographic information, and specific identifying information was not solicited. Data were electronically stored and password protected. Specifically, the data is being electronically kept on the researcher's password protected computer and the data file is additionally password protected. No data were collected until research approval was granted by the Walden University Institutional Review Board (IRB).

## Summary

In this chapter, I described the research methodology for this quantitative mediation study. The purpose of this research was to determine whether DJ mediates the relationship between ACEs and PRF among caregivers of children under the age of six years. I also outlined the rationale for the research design, as well as the population, sample, instruments, sampling procedures, ethical considerations, data collection, and data analysis strategy. Participants were invited to complete a demographic questionnaire, the Adverse Childhood Experiences questionnaire, Joyful Life Scale, and Parental Reflective Functioning Questionnaire via various social media platforms. Data were analyzed using correlational analysis and multiple regression to determine the predictive quality of the independent variable of ACEs and the mediator variable of DJ on the dependent variable of PRF. In Chapter 4, I report the results of the study.

## Chapter 4: Results

### Introduction

The purpose of this study was to determine if there were relationships among ACEs and PRF, ACEs and positive emotions, and PRF and DJ, and where there was a mediating effect of DJ on the relationship between ACEs and PRF among parents of children under the age of 6 years. In this chapter, I explain how the data were collected, the timeframe for data collection, and the characteristics of the sample. Basic demographic information and descriptive statistics are also provided. The results of the study and the statistical analyses that were completed are included at the end of this chapter, along with a summary.

The research questions and hypotheses are listed below.

RQ<sub>1</sub>: What relationship exists between adverse childhood experiences (ACEs), as measured by the cumulative score on the ACE questionnaire, and parental reflective functioning (PRF), as measured by the Parental Reflective Functioning Questionnaire-Interest and Curiosity in Mental States subscale (PRFQ-IC; Luyten et al., 2017b) score?

H<sub>01</sub>: There is no statistically significant correlation between ACEs and PRF.

H<sub>a1</sub>: There is a statistically significant correlation between ACEs and PRF.

RQ<sub>2</sub>: What relationship exists between ACEs, as measured by the cumulative score on the ACE questionnaire, and dispositional joy (DJ), as measured by Joyful Life Scale (JLS; Robbins et al., 2019) score?

H<sub>02</sub>: There is no statistically significant correlation between ACEs and DJ.

H<sub>a2</sub>: There is a statistically significant correlation between ACEs and DJ

RQ<sub>3</sub>: What relationship exists between PRF, as measured by PRFQ-IC (Luyten et al., 2017b) score, and DJ, as measured by JLS score (Robbins et al., 2019)?

H<sub>03</sub>: There is no statistically significant correlation between PRF and DJ.

H<sub>a3</sub>: There is a statistically significant correlation between the PRF and DJ.

RQ<sub>4</sub>: To what extent does DJ, as measured by JLS (Robbins et al., 2019) score, mediate the relationship between ACEs, as measured by cumulative score on the ACE questionnaire, and PRF, as measured by PRFQ-IC score (Luyten et al., 2017b)?

H<sub>04</sub>: DJ does not mediate the relationship between ACEs and PRF.

H<sub>a4</sub>: DJ significantly mediates the relationship between ACEs and PRF.

### **Data Collection**

The time frame for data collection was 14 days. Data were collected using a self-administered web-based demographic questionnaire and three instruments. Specifically, the survey included a demographic questionnaire, the ACEs questionnaire to determine the participant's cumulative number of ACEs, the JLS to measure DJ, and the PRFQ to measure PRF. I invited participants via social media platforms, including Facebook, Reddit, Instagram, and Twitter, with the study's description and link to SurveyMonkey, a



secure platform for collecting survey data (SurveyMonkey, 2017). All invitations included a description of the study, inclusion criteria, and a link to the survey on SurveyMonkey (see Appendix A). Data analysis included participants who provided informed consent to participate, met all inclusion criteria, and responded to all survey items. A total of 162 individuals clicked on the survey link, and 147 individuals provided consent to participate in the survey. A total of 23 participants were removed from the sample due to not meeting inclusion criteria, resulting in a survey completion rate of 76%.

### **Participant Demographics**

This study included parents who were at least 18 years old and were current primary caregivers for one or more children under the age of 6 years. Six demographic questions were used to create a participant profile for this sample, which included age, gender, ethnicity, relationship status, highest level of education, and employment status (Appendix C).

As noted in Chapter 3, participants for this study included caregivers who were currently caring for one or more children under the age of six years who voluntarily agreed to participate. Participants were recruited through the social media platforms Instagram, Reddit, and Facebook, though the number of respondents from each platform was not collected. No incentives were offered in exchange for completion of the survey. The total number of responses for this study was 147, and the total number of responses included in the analysis was 124 ( $N = 124$ ). The majority of the sample consisted of 45 18- to 29-year-olds (30.6%) and 69 30- to 39-year-olds (46.9%). Participants in this sample predominantly identified as female (107, 72.8%) and Caucasian or White (114,

77.6%). For this sample, 93 (63.3%) were married and 22 (15%) were single. There were 41 (27.9%) participants who reported that their highest level of education was a bachelor's degree, 37 (25.2%) reported a master's degree, 26 (17.7%) reported some college, 11 (7.5%) had a high school diploma, six (4.1%) had a doctorate degree, and three (2%) a GED. More than half of participants ( $n = 87$ , 59.2%) reported their employment status as employed full time. Table 1 presents a visual summary of the participant demographic data collected from the survey.

**Table 1***Demographic Characteristics of Study Sample*

	Characteristic	<i>N</i>	%	
Age ranges	18–29 years	45	30.6	
	30–39 years	69	46.9	
	40–49 years	7	4.8	
	50–59 years	2	1.4	
	60+ years	1	.7	
	Gender	Male	15	10.2
Female		107	72.8	
Transgender		1	.7	
Nonbinary		1	.7	
Other		0	0	
Ethnicity		Latinx, Chicano/a, or Hispanic	2	1.4
	Caucasian or White	114	77.6	
	African American or Black	5	3.4	
	Native American, American Indian, or Alaskan Native	0	0	
	Asian American or Asian	2	1.4	
	Persian or Middle Eastern	0	0	
	Pacific Islander	0	0	
	Other	1	.7	
	Relationship status	Single	22	15.0
		Married	93	63.3
Legal partnership		1	.7	
Divorced		5	3.4	
Other		3	2.0	
Highest level of education		No high school diploma	0	0
	High school diploma	11	7.5	
	GED	3	2.0	
	Some college	26	17.7	
	Bachelor's degree	41	27.9	
	Master's degree	37	25.2	
	Doctorate degree	6	4.1	
Employment status	Employed full time	87	59.2	
	Employed part time	11	7.5	
	Seeking employment	2	1.4	
	Homemaker	17	11.6	
	Retired	0	0	
	Other	7	4.8	

## Descriptive Statistics

I examined Cronbach's alphas for each of the three instruments used in this study to determine reliability.

### **Cronbach's Alpha for Adverse Childhood Experiences Scale**

#### *Introduction*

A Cronbach's alpha coefficient was calculated for the ACE scale, consisting of ACE1, ACE2, ACE3, ACE4, ACE5, ACE6, ACE7, ACE8, ACE9, and ACE10. The Cronbach's alpha coefficient was evaluated using the guidelines suggested by George and Mallery (2018), where  $> .9$  is excellent,  $> .8$  is good,  $> .7$  is acceptable,  $> .6$  is questionable,  $> .5$  is poor, and  $\leq .5$  is unacceptable.

#### *Results*

The items for ACE had a Cronbach's alpha coefficient of .83, indicating good reliability, and were consistent with the literature (Murphy et al., 2014). Table 2 presents the results of the reliability analysis.

**Table 2**

*Reliability Table for Adverse Childhood Experience*

Scale	No. of items	$\alpha$	Lower bound	Upper bound
ACE	10	.83	.79	.86

*Note.* The lower and upper bounds of Cronbach's  $\alpha$  were calculated using a 95.00%

confidence interval.

## **Cronbach's Alpha for Joyful Life Scale**

### ***Introduction***

A Cronbach's alpha coefficient was calculated for the JLS, consisting of JLS1, JLS2, JLS3, JLS4, JLS5, JLS6, JLS7, JLS8, JLS9, JLS10, JLS11, JLS12, JLS13, JLS14, JLS15, JLS16, JLS17, JLS18, and JLS19. The Cronbach's alpha coefficient was evaluated using the guidelines suggested by George and Mallery (2018), where  $> .9$  is excellent,  $> .8$  is good,  $> .7$  is acceptable,  $> .6$  is questionable,  $> .5$  is poor, and  $\leq .5$  is unacceptable.

### ***Results***

The items for JLS had a Cronbach's alpha coefficient of .95, indicating excellent reliability. Table 3 presents the results of the reliability analysis.

**Table 3**

*Reliability Table for Joyful Life Scale*

Scale	No. of items	$\alpha$	Lower bound	Upper bound
JLS	19	.95	.93	.96

*Note.* The lower and upper bounds of Cronbach's  $\alpha$  were calculated using a 95.00% confidence interval.

## **Cronbach's Alpha for Parental Reflective Functioning Questionnaire**

### ***Introduction***

A Cronbach's alpha coefficient was calculated for the PRF scale, consisting of PRFQ1, PRFQ2, PRFQ3, PRFQ4, PRFQ5, PRFQ6, PRFQ7, PRFQ8, PRFQ9, PRFQ10, PRFQ11, PRFQ12, PRFQ13, PRFQ14, PRFQ15, PRFQ16, PRFQ17, and PRFQ18. The Cronbach's alpha coefficient was evaluated using the guidelines suggested by George

and Mallery (2018), where  $> .9$  is excellent,  $> .8$  is good,  $> .7$  is acceptable,  $> .6$  is questionable,  $> .5$  is poor, and  $\leq .5$  is unacceptable.

### **Results**

The items for PRF had a Cronbach's alpha coefficient of .78, indicating acceptable reliability.

**Table 4**

*Reliability Table for Parental Reflective Functioning Questionnaire*

Scale	No. of items	$\alpha$	Lower bound	Upper bound
PRF	18	.78	.73	.83

*Note.* The lower and upper bounds of Cronbach's  $\alpha$  were calculated using a 95.00% confidence interval.

### **Descriptive Statistics for Adverse Childhood Experiences, Joyful Life Scale, and Parental Reflective Functioning Questionnaire**

#### **Summary Statistics**

The observations for ACEs had an average of 17.78 ( $SD = 2.52$ ,  $SE_M = 0.23$ , Min = 10.00, Max = 20.00, Skewness = -1.24, Kurtosis = 0.59). The observations for JLS had an average of 2.89 ( $SD = 0.92$ ,  $SE_M = 0.09$ , Min = 1.11, Max = 5.89, Skewness = 0.49, Kurtosis = -0.04). The observations for PRF had an average of 4.30 ( $SD = 0.39$ ,  $SE_M = 0.04$ , Min = 3.11, Max = 5.17, Skewness = -0.10, Kurtosis = 0.12). When the skewness is greater than 2 in absolute value, the variable is considered to be asymmetrical about its mean. When the kurtosis is greater than or equal to 3, then the variable's distribution is markedly different than a normal distribution in its tendency to produce outliers (Westfall & Henning, 2013). The summary statistics can be found in Table 5.

**Table 5**

*Summary Statistics Table for Interval and Ratio Variables*

Variable	<i>M</i>	<i>SD</i>	<i>n</i>	<i>SE<sub>M</sub></i>	Min	Max	Skewness	Kurtosis
ACEs	17.78	2.52	121	0.23	10.00	20.00	-1.24	0.59
JLS	2.89	0.92	113	0.09	1.11	5.89	0.49	-0.04
PRFQ	4.30	0.39	110	0.04	3.11	5.17	-0.10	0.12

*Note.* ‘-’ indicates the statistic is undefined due to constant data or an insufficient

sample size,  $N = 110$ .

## Analysis and Key Findings

### Research Question 1

#### *Introduction*

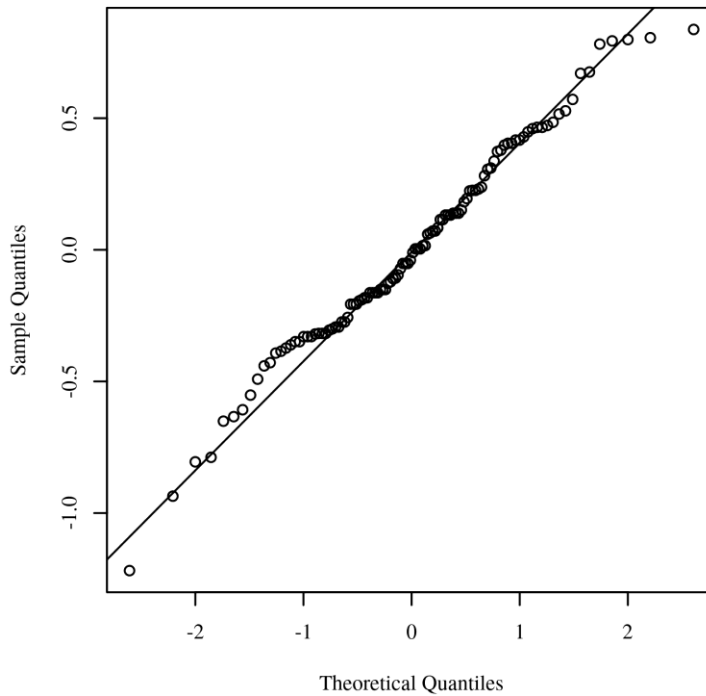
A Pearson correlation analysis was conducted to evaluate the relationship between ACEs and PRF.

#### *Assumptions*

**Normality.** The assumption of normality was assessed by plotting the quantiles of the model residuals against the quantiles of a chi-square distribution, also called a Q-Q +scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the quantiles of the residuals must not strongly deviate from the theoretical quantiles. Strong deviations could indicate that the parameter estimates are unreliable. Figure 1 presents a Q-Q scatterplot of the model residuals.

**Figure 1**

*Q-Q Scatterplot for Normality for the Residuals for the Regression Model for Adverse Childhood Experiences and Parental Reflective Functioning*

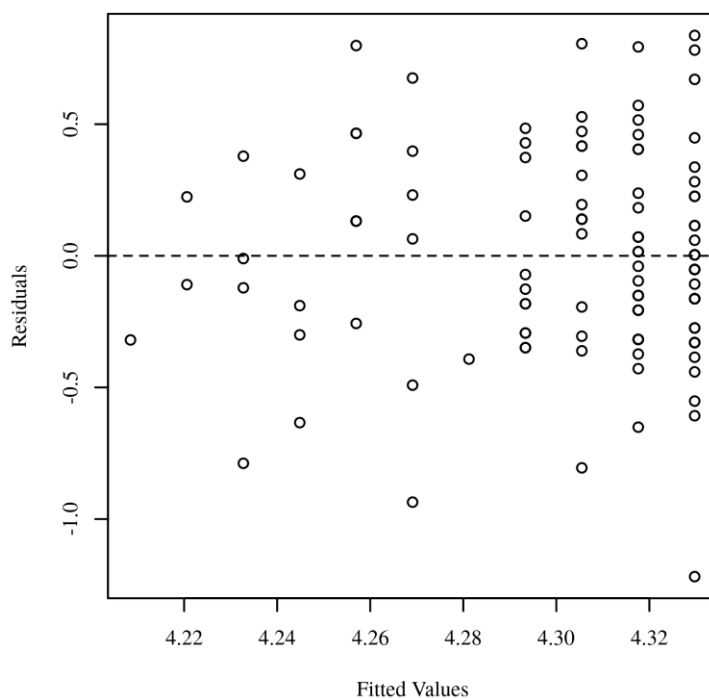


**Homoscedasticity.** Homoscedasticity was evaluated by plotting the residuals against the predicted values for ACE and PRF (Bates et al., 2014; Field, 2017; Osborne & Walters, 2002). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 2 presents a scatterplot of predicted values and model residuals.



**Figure 2**

*Residuals Scatterplot Testing Homoscedasticity for Adverse Childhood Experiences and Parental Reflective Functioning*



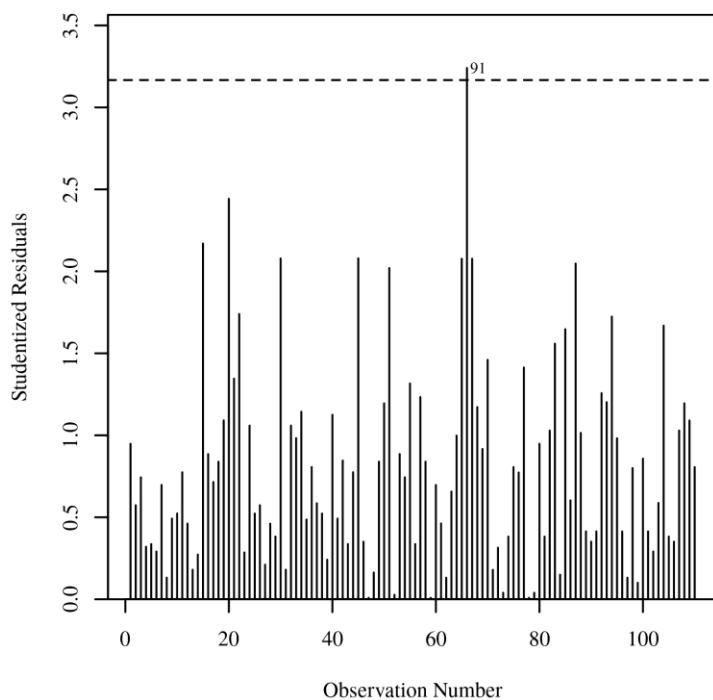
**Multicollinearity.** Since there was only one predictor variable, multicollinearity does not apply, and Variance Inflation Factors were not calculated.

**Outliers.** To identify influential points, Studentized residuals were calculated, and the absolute values were plotted against the observation numbers (Field, 2017; Pituch & Stevens, 2015). Studentized residuals are calculated by dividing the model residuals by the estimated residual standard deviation. An observation with a Studentized residual greater than 3.17 in absolute value, the 0.999 quantile of a  $t$  distribution with 109 degrees of freedom, was considered to have significant influence on the results of the model.

Figure 3 presents the Studentized residuals plot of the observations. Observation numbers are specified next to each point with a Studentized residual greater than 3.17.

**Figure 3**

*Studentized Residuals Plot for Outlier Detection for Adverse Childhood Experiences and Parental Reflective Functioning*



**Results**

A total of 111 participants completed the ACE questionnaire and the PRFQ and were included in the data analysis. The results of the Pearson correlation analysis did not indicate that a significant relationship exists between the ACEs composite score and the PRFQ-IC score. However, Pearson  $r$  correlations did show a significant negative correlation coefficient between ACEs Dysfunction subscale and the PRFQ-CMS

subscale,  $r = -.216$ ,  $p = .023$ . Table 6 summarizes the results of the Pearson correlation analysis.

**Table 6**

*Adverse Childhood Experiences and Parental Reflective Functioning Pearson Correlation*

		PM	CMS	IC
ACEs	Pearson correlation	.129	-.148	.013
	Sig. (2-tailed)	.178	.122	.891
	<i>N</i>	111	111	111
Abuse	Pearson correlation	.110	-.057	.081
	Sig. (2-tailed)	.251	.554	.398
	<i>N</i>	111	111	111
Neglect	Pearson correlation	.148	-.043	.014
	Sig. (2-tailed)	.121	.654	.886
	<i>N</i>	111	111	111
Dysfunction	Pearson correlation	.091	-.216*	-.038
	Sig. (2-tailed)	.340	.023	.689
	<i>N</i>	111	111	111

\* Correlation is significant at the 0.05 level (2-tailed).

## Research Question 2

### *Introduction*

A Pearson correlation analysis was conducted to evaluate the relationship between ACEs and DJ.

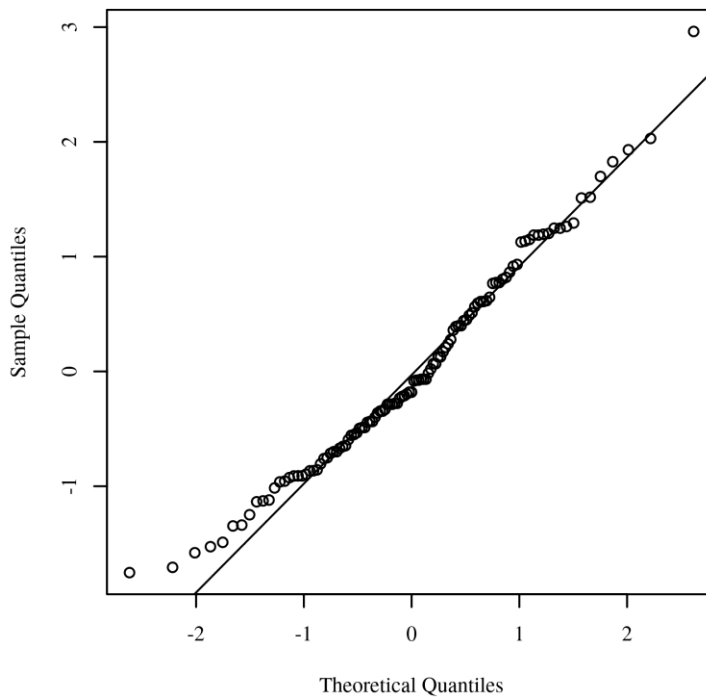
### *Assumptions*

**Normality.** The assumption of normality was assessed by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, also called a Q-Q scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the quantiles of

the residuals must not strongly deviate from the theoretical quantiles. Strong deviations could indicate that the parameter estimates are unreliable. Figure 4 presents a Q-Q scatterplot of the model residuals.

**Figure 4**

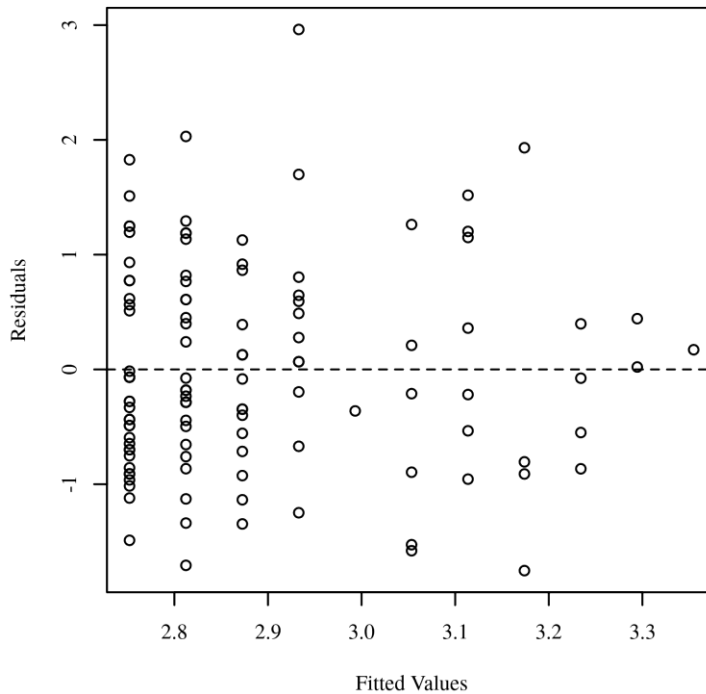
*Q-Q Scatterplot for Normality for the Residuals for the Regression Model*



**Homoscedasticity.** Homoscedasticity was evaluated by plotting the residuals against the predicted values (Bates et al., 2014; Field, 2017; Osborne & Walters, 2002). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 5 presents a scatterplot of predicted values and model residuals.

**Figure 5**

*Residuals Scatterplot Testing Homoscedasticity for Adverse Childhood Experiences and Dispositional Joy*



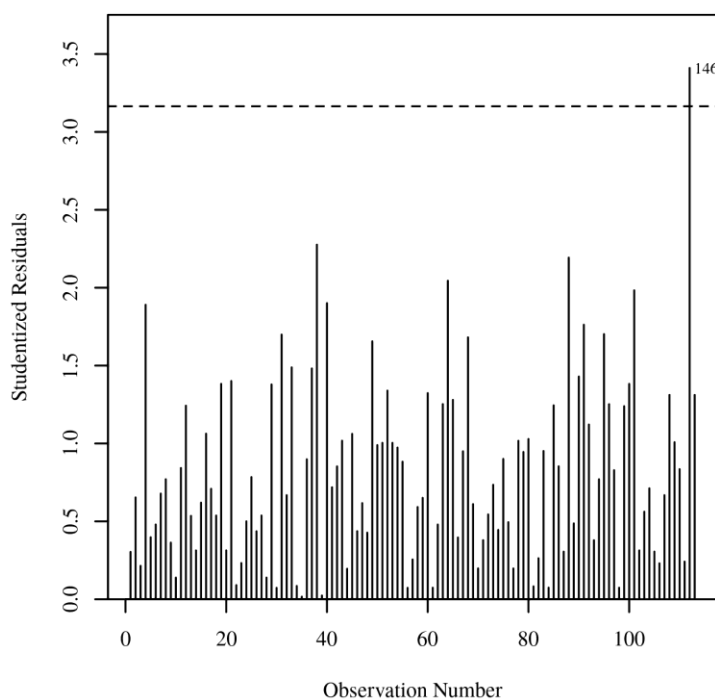
**Multicollinearity.** Since there was only one predictor variable, multicollinearity does not apply, and Variance Inflation Factors were not calculated.

**Outliers.** To identify influential points, Studentized residuals were calculated and the absolute values were plotted against the observation numbers (Field, 2017; Pituch & Stevens, 2015). Studentized residuals are calculated by dividing the model residuals by the estimated residual standard deviation. An observation with a Studentized residual greater than 3.16 in absolute value, the 0.999 quantile of a  $t$  distribution with 112 degrees of freedom, was considered to have significant influence on the results of the model.

Figure 6 presents the Studentized residuals plot of the observations. Observation numbers are specified next to each point with a Studentized residual greater than 3.16.

**Figure 6**

*Studentized Residuals Plot for Outlier Detection for Adverse Childhood Experiences and Dispositional Joy*



**Results**

A total of 113 participants completed the ACE questionnaire and the JLS and were included in the data analysis. The results of the Pearson regression analysis did not indicate a significant relationship between ACEs composite score and JLS score.

However, Pearson  $r$  correlations did show a significant negative correlation coefficient between ACEs Neglect subscale and JLS score,  $r = -.217$ ,  $p = .021$ . Table 7 summarizes the results of Pearson correlation analysis.

**Table 7***Adverse Childhood Experiences and Dispositional Joy Pearson Correlation*

		JLS
ACEs	Pearson correlation	-.168
	Sig. (2-tailed)	.075
	<i>N</i>	113
Abuse	Pearson correlation	-.138
	Sig. (2-tailed)	.145
	<i>N</i>	113
Neglect	Pearson correlation	-.217*
	Sig. (2-tailed)	.021
	<i>N</i>	113
Dysfunction	Pearson correlation	-.112
	Sig. (2-tailed)	.237
	<i>N</i>	113

\* Correlation is significant at the 0.05 level (2-tailed).

**Research Question 3***Introduction*

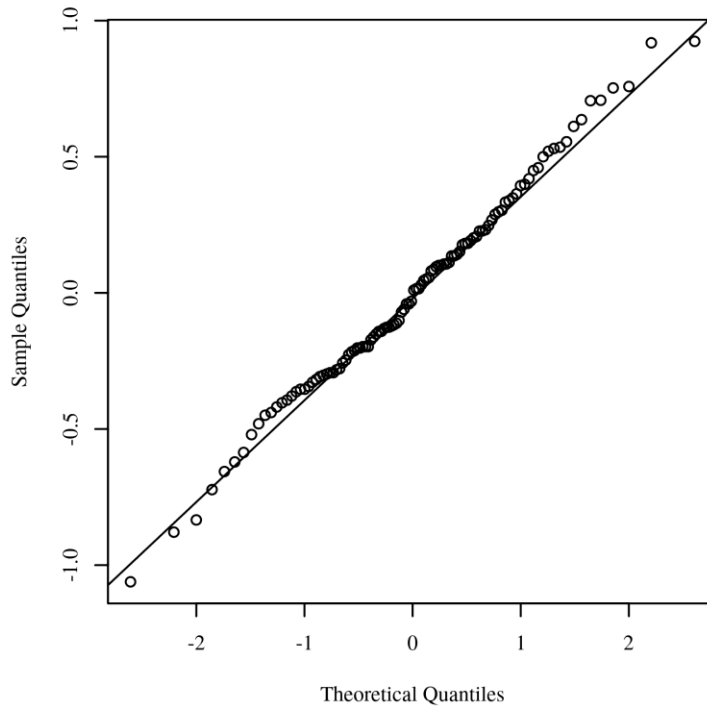
A Pearson correlation analysis was conducted to evaluate the relationship between DJ and PRF.

*Assumptions*

**Normality.** The assumption of normality was assessed by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, also called a Q-Q scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the quantiles of the residuals must not strongly deviate from the theoretical quantiles. Strong deviations could indicate that the parameter estimates are unreliable. Figure 7 presents a Q-Q scatterplot of the model residuals.

**Figure 7**

*Q-Q Scatterplot for Normality of the Residuals for the Regression Model*

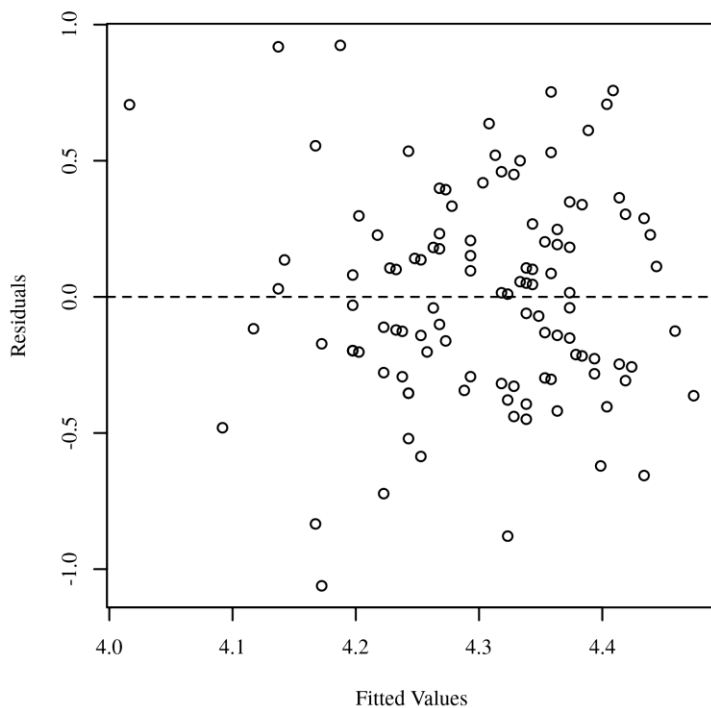


**Homoscedasticity.** Homoscedasticity was evaluated by plotting the residuals against the predicted values (Bates et al., 2014; Field, 2017; Osborne & Walters, 2002). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 8 presents a scatterplot of predicted values and model residuals.



**Figure 8**

*Residuals Scatterplot Testing Homoscedasticity*

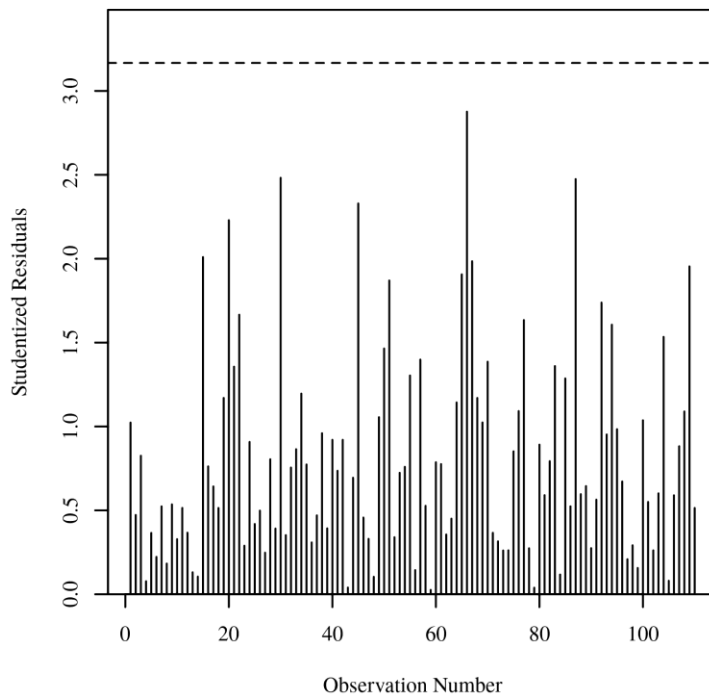


**Multicollinearity.** Since there was only one predictor variable, multicollinearity does not apply, and Variance Inflation Factors were not calculated.

**Outliers.** To identify influential points, Studentized residuals were calculated and the absolute values were plotted against the observation numbers (Field, 2017; Pituch & Stevens, 2015). Studentized residuals are calculated by dividing the model residuals by the estimated residual standard deviation. An observation with a Studentized residual greater than 3.17 in absolute value, the 0.999 quantile of a  $t$  distribution with 109 degrees of freedom, was considered to have significant influence on the results of the model. Figure 9 presents the Studentized residuals plot of the observations. Observation numbers are specified next to each point with a Studentized residual greater than 3.17.

**Figure 9**

*Studentized Residuals Plot for Outlier Detection for Dispositional Joy and Parental Reflective Functioning*

**Results**

A total of 111 participants completed the JLS and the PRFQ and were included in the data analysis. The results of the Pearson correlation analysis indicated a significant positive relationship between PRFQ-IC score and JLS score,  $r = .359$ ,  $p = <.001$ .

Additionally, the results suggest a significant negative relationship between PRFQ-PM score and JLS score,  $r = -.478$ ,  $p = <.001$ . Table 8 summarizes the results of the Pearson correlation analysis.

**Table 8***Parental Reflective Functioning and Dispositional Functioning Pearson Correlation*

		JLS
PM	Pearson correlation	-.478**
	Sig. (2-tailed)	< .001
	<i>N</i>	111
CMS	Pearson correlation	-.022
	Sig. (2-tailed)	.821
	<i>N</i>	111
IC	Pearson correlation	.359**
	Sig. (2-tailed)	< .001
	<i>N</i>	111

\*\* Correlation is significant at the 0.01 level (2-tailed).

#### **Research Question 4**

##### *Mediation*

A causal mediation analysis was conducted to assess if JLS mediated the relationship between ACE and PRF. A mediation analysis using the guidelines established by Baron and Kenny (1986) was conducted to assess if JLS mediates the relationship between ACE and PRF.

A series of regressions was conducted to assess mediation. First, a linear regression was used to assess ACEs as a predictor of PRF. The results of the linear regression were not statistically significant,  $F(1,109) = .019, p = .891$  (Table 9). Second, a linear regression was used to assess ACEs as a predictor of the mediator, DJ. The results of the linear regression were not statistically significant,  $F(1,111) = 3.233, p = .075$  (Table 10). Third, a multiple regression was used to evaluate if the mediator (DJ)

effected the outcome variable (PRF). The results of the linear regression were statistically significant,  $F(1,109) = 16.135, p = <.001$  (Table 11).

Finally, I conducted a multiple linear regression with all three of the study variables, ACEs (independent variable) and DJ (mediator) predicting PRF (dependent variable). The overall multiple linear regression was statistically significant,  $F(2,108) = 8.349, p = <.001$  (Table 12). The regression equation for predicting PRF from ACEs was not significant,  $b = .022, t(108) = .787, p = .433$  (Table 13). However, the effects for predicting PRF from DJ was significant,  $b = .017, t(108) = .4.084, p = <.001$ .

**Table 9**

*Regression Analysis of Variance for Adverse Childhood Experiences as a Predictor of Parental Reflective Functioning*

Model	Sum of squares	df	Mean square	F	P
Regression	.012	1	.012	.019	.891
Residual	67.098	109	.616		
Total	67.110	110			

**Table 10**

*Regression Analysis of Variance for Adverse Childhood Experiences as a Predictor of Dispositional Joy*

Model	Sum of squares	df	Mean square	F	P
Regression	973.739	1	973.739	3.233	.075
Residual	33434.987	111	301.216		
Total	34408.726	112			

**Table 11**

*Regression Analysis of Variance for Dispositional Joy as a Predictor of Parental Reflective Functioning*

Model	Sum of squares	<i>df</i>	Mean square	<i>F</i>	<i>P</i>
Regression	8.653	1	8.653	16.135	< .001
Residual	58.457	109	.536		
Total	67.110	110			

**Table 12**

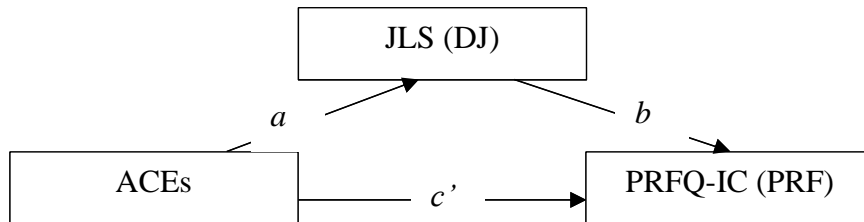
*Multiple Regression Analysis of Variance for Dispositional Joy Mediating the Relationship Between Adverse Childhood Experiences and Parental Reflective Functioning*

Model	Sum of squares	<i>df</i>	Mean square	<i>F</i>	<i>p</i>
Regression	8.987	2	4.493	8.349	< .001
Residual	58.123	108	.538		
Total	67.110	110			

**Table 13**

*Multiple Regression Coefficients for Dispositional Joy Mediating the Relationship Between Adverse Childhood Experiences and Parental Reflective Functioning*

Model	Unstandardized <i>B</i>	<i>SE</i>	Standard coefficients $\beta$	<i>t</i>	<i>p</i>
Constant	.704	.540			
JLS	.017	.004	.370	4.084	< .001
ACEs	.022	.027	.071	.787	.433

**Figure 10***Node Diagram for the Mediation Analysis***Summary**

The results indicated an insignificant relationship between ACEs and PRF and ACEs and JLS. However, The JLS was found to predict the ACE Neglect subscale as well as the IC and PM subscales of the PRFQ. The results also showed a significant relationship between PRF and JLS. The multiple regression analysis demonstrated that only JLS, and not ACES, predicted statistically significant variance in the dependent variable, PRF. Chapter 5 will present an interpretation of the findings, discuss the limitations of this study, recommendations for future research, and implications for social change.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The purpose of this quantitative nonexperimental study was to determine the relationships among ACEs, DJ, and PRF among parents of young children. This study utilized a survey research design and mediational analysis. All participants were at least 18 years old, fluently spoke and read English, lived in the United States, and were currently a primary caregiver for at least one child under the age of 6 years. I invited participants via social media platforms, including Facebook, Reddit, Instagram, and Twitter, with the study's description and a link to SurveyMonkey, a secure platform for collecting survey data (SurveyMonkey, 2017). Participants who provided informed consent and passed the inclusion criteria screening questions continued to the remaining sections of the survey containing demographic questions, the ACE questionnaire, the JLS, and the PRFQ.

### **Interpretation of Findings**

#### **Research Question 1 Findings**

Through Research Question 1, I sought to determine what relationship exists between ACEs, as measured by the cumulative score on the ACE questionnaire, and PRF, as measured by the PRFQ-IC score. The results of the Pearson correlation analysis were not significant. Therefore, I rejected the alternative ( $H_{a1}$ ) hypothesis that there is a statistically significant correlation between ACEs and PRF. However, it was notable that there was a significant negative correlation between the ACE Dysfunction subscale and the PRFQ-CMS subscale.

### **Research Question 1 Discussion**

This study's finding that there is no statistically significant correlation between ACEs and PRF is partially consistent with prior research. As a whole, there is evidence that some parents with a history of maltreatment are at an increased risk of engaging in insensitive parenting behaviors (Enlow et al., 2011) and demonstrate impaired parenting capacities (Berthelot et al., 2015, as cited in Ensink et al., 2017). However, childhood maltreatment has not been shown to directly predict poor PRF (Fonagy et al., 1993). Not every parent with ACEs experiences posttraumatic stress or engages in negative parenting behaviors (Berthelot et al., 2015, as cited in Ensink et al., 2017). Instead, poor PRF is better predicted by the individual's inability to cope with painful memories of past abuse (Fonagy et al., 1993), which aligns with the theory of PTG. Specifically, for some individuals, encounters with traumatic experiences can serve as a catalyst for positive growth (Tedeschi & Calhoun, 2004). However, it is notable that this study focused on one of the three PRFQ subscales, Interest and Curiosity in Mental States, and used the ACE composite score and did not target any of the three ACE subscales. When all of the subscales from the ACE questionnaire and PRFQ were included, there was a significant negative correlation between the ACE Dysfunction subscale and the PRFQ-CMS subscale. This result suggests that fewer experiences of household dysfunction in childhood are associated with increased scores on the Certainty About Mental States subscale of the PRFQ in adulthood. The findings of this study, specifically that a significant negative correlation exists between the ACE Dysfunction subscale and the PRFQ-CMS subscale, is consistent with past research. Bailey et al. (2012) found that the type of childhood maltreatment can influence how negative parenting outcomes manifest.



Mothers who reported a history of experiencing childhood neglect, emotional maltreatment, and witnessing family violence demonstrated signs of hostility in interactions with their children, including expressed impatience and frustration (Bailey et al., 2012). A reported history of sexual and physical abuse in childhood was not found to be associated with any differences in observed parent–child interactions (Bailey et al., 2012).

### **Research Question 2 Findings**

Through Research Question 2, I sought to determine what relationship exists between ACEs, as measured by the cumulative score on the ACE questionnaire, and DJ, as measured by the JLS score. The results of the Pearson correlation analysis did not indicate a significant relationship. As a result, I rejected the alternative ( $H_{a2}$ ) hypothesis that there is a statistically significant correlation between ACEs and DJ. Although the relationship between the target variables was not significant, the results showed a significant negative correlation between the ACE Neglect subscale and JLS score.

### **Research Question 2 Discussion**

This study's finding that there is no statistically significant correlation between ACEs and DJ is not consistent with prior research. However, it is important to note that the focus of this study was on the composite score of the ACE questionnaire, and not the specific subscales. Use of a cumulative ACE score to assess stress experienced in childhood is consistent with existing literature (Murphy et al., 2014). When the three ACE questionnaire subscales, Neglect, Dysfunction, and Abuse, were included, there was a significant negative correlation between the ACE Neglect subscale and JLS score. This would suggest that fewer reported experiences of neglect in childhood are associated with

increased JLS scores in adulthood. This specific finding is consistent with past research. An overwhelming body of research has shown that early adverse experiences can impact an individual's subjective well-being in adulthood (Oshio et al., 2013). Stressful life events can produce short- and long-term effects on an individual's subjective sense of well-being (Luhmann et al., 2012). Specifically, there appears to be an inverse relationship between stressful life events and subjective life satisfaction (Ng et al., 2018). The overall finding that there is no significant relationship between ACEs as a whole and DJ, but that there is between the ACE Neglect subscale and JLS score, is also consistent with prior research that suggests that the type of childhood maltreatment impacts emotion expression disposition. Brodski and Hutz (2012) found that in addition to negatively impacting subjective well-being, individuals who reported memories of emotional abuse in childhood demonstrated higher levels of negative affect and lower levels of positive affect.

### **Research Question 3 Findings**

Through Research Question 3, I asked about what relationship exists between PRF, as measured by PRFQ-IC score, and DJ, as measured by JLS score. The results of the Pearson correlation analysis indicated a significant positive relationship between PRFQ-IC score and JLS score,  $r = .359$ ,  $p = < .001$ . As a result, I cannot reject the alternative ( $H_{a3}$ ) hypothesis that there is a statistically significant correlation between the PRF and DJ. Additionally, the results show a significant negative relationship between PRFQ-PM score and JLS score.

### **Research Question 3 Discussion**

This study's finding that there is a statistically significant correlation between PRF and DJ is a notable contribution to the literature, as it is the first of its kind to link PRF to JLS. Specifically, this study's results suggest that higher levels of DJ are associated with increased PRF, which is consistent with prior research. Although this study focused on the PRFQ-IC subscale, the data analysis also showed a significant negative correlation between the PRFQ-PM subscale and JLS. The overall finding of a relationship between DJ and PRF is consistent with prior research that shows evidence of positive emotions, like DJ, and influencing responsiveness in parenting (Desjardins et al., 2008) and personality organization being associated with negative and insensitive parenting behaviors, such as intrusiveness, aggression, and maternal withdrawal or neglect (Ensink et al., 2017). Research conducted by Luyten et al. (2017a) provides a framework for understanding the present finding that both increased IC and decreased PM were related to JLS. Luyten et al. (2017a) found that both PM and IC are related to infant attachment security. Specifically, Luyten et al. (2017a) found that the odds of an infant having a secure attachment were 2 to 3 times higher for mothers with higher levels of IC and low PM, respectively. In their exploratory analysis, Luyten et al. (2017a) found that PM was highly associated with both anxious-avoidant and anxious-resistant attachment patterns. Their overall results indicated that infant anxious-avoidant attachment was strongly associated with high maternal PM and low CMS and IC, as compared to those of mothers who demonstrate secure attachment (Luyten et al., 2017a).

### Research Question 4 Findings

Finally, the fourth research question addressed to what extent DJ, as measured by JLS score, mediates the relationship between ACEs, as measured by cumulative score on the ACE questionnaire, and PRF, as measured by PRFQ-IC score. A series of regressions was conducted to assess mediation. First, a linear regression was used to assess ACEs as a predictor of PRF. The results of the linear regression were not statistically significant,  $F(1,109) = .019, p = .891$  (Table 9). Second, a linear regression was used to assess ACEs as a predictor of the mediator, DJ. The results of the linear regression were not statistically significant,  $F(1,111) = 3.233, p = .075$  (Table 10). Third, a multiple regression was used to evaluate whether the mediator (DJ) affected the outcome variable (PRF). The results of the linear regression were statistically significant,  $F(1,109) = 16.135, p = <.001$  (Table 11). Finally, I conducted a multiple linear regression analysis with all three of the study variables, ACEs (independent variable) and DJ (mediator), predicting PRF (dependent variable). The overall linear regression,  $F(2,108) = 8.349, p = <.001$ , and the effects for predicting PRF from DJ,  $b = .017, t(108) = .4084, p = <.001$ , were significant (Table 12). However, the regression equation for ACEs predicting PRF was not significant,  $b = .022, t(108) = .787, p = .433$  (Table 13). Nevertheless, the first and second conditions necessary to support mediation were not met. Therefore, I rejected the alternative ( $H_{a4}$ ) hypothesis that DJ significantly mediates the relationship between ACEs and PRF.

### Research Question 4 Discussion

The overall multiple linear regression and the effects for DJ predicting PRF were statistically significant. However, the regression equation for predicting PRF from ACEs

was not significant. The absence of a mediation effect for DJ, in this case, is not due to the JLS failing to mediate the relationship between ACE score and PRFQ-IC score, but due to the fact that the ACE score did not predict PRFQ-IC score. These findings are partially consistent with prior research. Past research describes various ways in which parents may be impacted by ACEs. ACEs are associated with a wide number of impacts in adulthood, ranging from negative health outcomes (Iniguez & Stankowski, 2016) to increased risk for challenges in parenting and negative parenting outcomes (Bailey et al., 2012; Kolomeyer et al., 2016). However, a growing body of literature has demonstrated that different types of ACEs can contribute to the varying impacts. For example, Bailey et al. (2012) found that mothers who reported a history of experiencing childhood neglect, emotional maltreatment, and witnessing family violence demonstrated signs of hostility in interactions with their children, including expressed impatience and frustration, while a history of sexual and physical abuse in childhood was not found to be associated with any differences in observed parent–child interactions.

The results of the present study can also be conceptualized through the lens of PTG theory. Traumatic events can produce a vast number of positive and negative outcomes for those individuals who endure them. Although the psychological reactions to trauma are often unpleasant, there is a common belief that human suffering serves as a catalyst for positive growth, suggesting that distress and growth can coexist (Tedeschi & Calhoun, 2004). Childhood maltreatment is a serious risk factor for negative parenting outcomes, including poor PRF (Fonagy et al., 1993). Childhood maltreatment continues to be a pervasive problem in the United States, with an estimated 1 in 7 children experiencing abuse or neglect in the past year (Centers for Disease Control and

Prevention, 2022). However, not all parents who have a history of ACEs demonstrate compromised parenting abilities (Berthelot et al., 2015, as cited in Ensink et al., 2017). Individuals who are unable to cope with the painful memories of past maltreatment are more likely to struggle with poor PRF (Fonagy et al., 1993). In contrast, parents who cannot adequately mentalize about their own history of traumatic events are more able to be sensitive to the risk of engaging in frightening interactions with their child (Camoirano, 2017). Overall, the existing literature suggests that the impact of ACEs in adulthood is complex and multifaceted. As a result, it could be presumed that instruments that measure ACEs with a single variable, although valid measures (Murphy et al., 2014), may have limited predictive power when considering PRF. Although the results of this study did not support DJ as a mediator of the relationship between ACEs and PRF, it did provide valuable information that could be used to guide future research. Suggestions for future research are described in the next section.

### **Limitations of the Study**

This study relied solely on self-report data, which may be susceptible to evoking a social desirability bias. A social desirability bias occurs when individuals are asked questions about themselves and they respond through a filter of what will make them look good (Babbie, 2017). A web-based survey platform was used to help minimize the risk of a social desirability bias. Some survey questions asked about subjectively positive personality traits and parenting practices. This may have posed a challenge for participants to respond truthfully due to their subjective perception of what could be considered “good traits” and “bad traits” to have related to personality or parenting beliefs. Honest responding was encouraged through the use of informed consent and

guaranteeing participant confidentiality. This study used a convenience sample recruited through social media. The use of a convenience sample limits generalization to the sample (Cox, 2016a). The use of an online survey platform limited the sample population to those who had access to a computer, the internet, and social media, and the survey language was English. Finally, there was no way to verify that participants met all of the inclusion criteria. For example, the sample may have included parents who were under the age of 18 years. Although unlikely, the sample may have included individuals outside of the intended sample parameters.

### **Implications and Recommendations for Future Research**

This study was designed to determine the relationship between ACEs and PRF, ACEs and DJ, PRF and DJ, and the mediating effect of DJ on the relationship between ACEs and PRF among parents of children under the age of 6 years. Although the results of this study did not support DJ as a mediator of the relationship between ACEs and PRF, this study has possible positive social change implications. Parenting practices in early childhood serve as the foundation for an individual's functioning across their lifetime (Ranson & Uricuk, 2008). Identification of factors that promote positive parenting outcomes and PRF can contribute to the development of interventions and legislation that supports early intervention. This also includes the value of recognizing factors that may not be as impactful, which allows clinicians and researchers to focus their efforts in a meaningful direction. In the present study, the focus was limited to the IC subscale of the PRFQ and the composite score of the ACE questionnaire. Although the data analysis did not support relationships between the target variables in RQs 1 and 2, several valuable, associated relationships were identified. The results indicated a significant negative

correlation between the ACEs Dysfunction subscale and the PRFQ-CMS subscale and a significant negative relationship between PRFQ-PM score and JLS score. These findings can guide future research in evaluating the impact of specific types of maltreatment or specific elements of PRF. For example, future research may evaluate the relationship between childhood dysfunction, such as having a parent with a substance abuse problem, and parental prementalizing behaviors.

This study could have been strengthened by using alternative, more comprehensive and objective measures of PRF, such as the Parental Development Interview (PDI; Slade et al., 2004) or the Adult Attachment Interview (AAI; George et al., 1996). The gold standard for directly assessing RF is the Reflective Functioning Scale (RFS; Fonagy et al., 1998), which is an interview-based measure. The RFS is often applied to both the PDI and AAI (Anis et al., 2020). These assessments are also coded and scored by the researcher, which may allow for increased objectivity and a more in-depth understanding of PRF (Anis et al., 2020). It is recommended that future research studies implement assessments, such as the PDI or AAI, to obtain a more objective measure of RF. Additionally, future research may benefit from using an alternative instrument to evaluate early maltreatment or document maltreatment. Past research indicates that different types of ACEs can contribute to different types of negative impacts in adulthood (Bailey et al., 2012; Desjardins et al., 2008). Although the ACE questionnaire can include three supplemental subscales, there is a limited ability to differentiate different types of maltreatment. Alternatively, maltreatment could be documented by using a participant sample that only includes adults who were in foster care as children. Finally, the overwhelming majority of participants included in this study



identified as White or Caucasian and female. It is recommended that researchers in future studies aim to include a more diverse sample to obtain a better understanding of all families and allow the results to be more generalizable.

### **Conclusion**

PRF plays a critical role in the formation of secure parent–infant attachments (Slade, 2005). Emotionally nurturing relationships during a child’s first 3 years of life have been shown to impact lifelong health and well-being (Zero to Three, 2016). A growing body of research has demonstrated that parenting outcomes, including PRF, are the result of multiple pathways and encompass an individual’s unique combination of risk and resiliency factors (Belsky & Vondra, 1989; Camoirano, 2017; Slade, 2005). The purpose of this study was to evaluate the relationships among ACEs, DJ, and PRF and whether DJ mediates the relationship between ACEs and PRF. The study results indicated several important findings. The JLS was found to predict the ACE Neglect subscale as well as the IC and PM subscales of the PRFQ. These findings are the first of their kind and therefore a genuine advance for the literature. Although the results of this study did not support DJ as a mediator of the relationship between ACEs and PRF, there is undeniable value in pursuing a greater understanding of factors that promote the development of PRF.

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## Appendix A: Social Media Invitation

Headline: Participants Needed: Dispositional Joy, Adverse Childhood Experiences, and Parental Reflective Functioning

Message Body: I am inviting caregivers of children under the age of six years who speak English, live in the United States, and are at least 18 years old to participate in this survey. I would appreciate your participation in an anonymous, online survey about the relationship between adverse childhood experiences and parental reflective functioning and the role of positive emotions. The survey takes approximately 15 minutes to complete. Participation is completely voluntary and no identifying information will be collected. **To learn more, click the attached link.**

### Appendix B: Participant Inclusion Questions

Are you 18 years or older?

Do you fluently speak and read English?

Do you currently live in the United States?

Are you currently a primary caregiver for at least one child under the age of six years?

## Appendix C: Demographics Questionnaire

What is your age range (in years)?

- A. 18-29
- B. 30-39
- C. 40-49
- D. 50-59
- E. 60+

How many children under the age of 18 years are you currently caring for?

- A. 1
- B. 2
- C. 3
- D. 4
- E. 5+

What is your gender?

- A. Male
- B. Female
- C. Transgender
- D. Non-binary
- E. Other

What is your ethnicity?

- A. Latinx, Chicano/a, or Hispanic
- B. Caucasian or White
- C. African American or Black
- D. Native American, American Indian, or Alaskan Native
- E. Asian-American or Asian
- F. Persian or Middle Eastern
- G. Pacific Islander
- H. Other

What is your relationship status?

- A. Single
- B. Married
- C. Legal Partnership
- D. Divorced
- E. Other

What is your highest level of education?

- A. No Highschool Diploma
- B. Highschool Diploma
- C. GED
- D. Some College
- E. Bachelor's Degree
- F. Master's Degree
- G. Doctorate Degree

Employment status?

- A. Employed full-time

- B. Employed part-time
- C. Seeking Employment
- D. Homemaker
- E. Retired

## Appendix D: Adverse Childhood Experience Questionnaire

### Adverse Childhood Experience (ACE) Questionnaire

#### Finding your ACE Score

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

1. Did a parent or other adult in the household **often** ...  
Swear at you, insult you, put you down, or humiliate you?  
**or**  
Act in a way that made you afraid that you might be physically hurt?  
Yes No If yes enter 1 \_\_\_\_\_
2. Did a parent or other adult in the household **often** ...  
Push, grab, slap, or throw something at you?  
**or**  
**Ever** hit you so hard that you had marks or were injured?  
Yes No If yes enter 1 \_\_\_\_\_
3. Did an adult or person at least 5 years older than you **ever**...  
Touch or fondle you or have you touch their body in a sexual way?  
**or**  
Try to or actually have oral, anal, or vaginal sex with you?  
Yes No If yes enter 1 \_\_\_\_\_
4. Did you **often** feel that ...  
No one in your family loved you or thought you were important or special?  
**or**  
Your family didn't look out for each other, feel close to each other, or support each other?  
Yes No If yes enter 1 \_\_\_\_\_
5. Did you **often** feel that ...  
You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?  
**or**  
Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?  
Yes No If yes enter 1 \_\_\_\_\_
6. Were your parents **ever** separated or divorced?  
Yes No If yes enter 1 \_\_\_\_\_
7. Was your mother or stepmother:  
**Often** pushed, grabbed, slapped, or had something thrown at her?  
**or**  
**Sometimes or often** kicked, bitten, hit with a fist, or hit with something hard?  
**or**  
**Ever** repeatedly hit over at least a few minutes or threatened with a gun or knife?  
Yes No If yes enter 1 \_\_\_\_\_
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?  
Yes No If yes enter 1 \_\_\_\_\_
9. Was a household member depressed or mentally ill or did a household member attempt suicide?  
Yes No If yes enter 1 \_\_\_\_\_
10. Did a household member go to prison?  
Yes No If yes enter 1 \_\_\_\_\_

## Appendix E: Joyful Life Scale

## JOYFUL LIFE SCALE

Instructions: The statements below may be statements you agree with, or they may be statements you disagree with. Using the 1-7 scale below, indicate the extent of your agreement or disagreement with each item by placing the appropriate number on the line preceding that item. You are strongly encouraged to be as open and honest as possible in your answers.

7 – Strongly agree

6 – Agree

5 – Slightly agree

4 – Neither agree nor disagree

3 – Slightly disagree

2 – Disagree

1 – Strongly disagree

\_\_\_ If something bad happens, it won't ruin my day.

\_\_\_ In a job I dislike, I can still remain content.

\_\_\_ I consider myself a joyful person.

\_\_\_ People often tell me I'm a cheerful person.

\_\_\_ No matter what life offers, I can still find joy in life.

\_\_\_ I can find satisfaction in life when things aren't going my way.

\_\_\_ During difficult times, I take advantage of the challenge in order to grow as a person.

\_\_\_ Despite what may happen to me, I am able to maintain a sense of well-being.

\_\_\_ Whatever life throws at me, I don't let it get me down.

\_\_\_ There's always something in life to be joyful about.

\_\_\_ Joy is possible even during times of suffering.

\_\_\_ I delight in most circumstances of my life.

\_\_\_ I often find myself in a state of bliss.

\_\_\_ Happiness is in the journey, not the destination.

\_\_\_ When life gets tough, I tend to find motivation to see the bright side of my situation.

\_\_\_ When bad things happen, I can still maintain a good mood.

\_\_\_ When life becomes difficult, it does not hinder my contentment.

\_\_\_ I have a positive attitude.

\_\_\_ I tend to look at the bright side of life.

## Appendix F: Parental Reflective Functioning Questionnaire

## 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.

1	2	3	4	5	6	7	
Strongly Disagree					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 G: ACEs Questionnaire Permission

The screenshot shows a web browser window with the URL <https://www.cdc.gov/violenceprevention/aces/about.html>. The page content includes:

- Search Bar:** A search box with the placeholder text "address:" and a "Submit" button.
- Related Links:** A sidebar containing several links:
  - [Data & Statistics \(WISQARS\)](#)
  - [Home & Recreational Safety](#)
  - [Opioid Overdose Prevention](#)
  - [Traumatic Brain Injury](#)
  - [Motor Vehicle Safety](#)
  - [Press Room](#)
- Study Questionnaires:** The main content area, featuring a section header "Study Questionnaires" and two paragraphs of text:
  - The first paragraph states: "The Family Health History and Health Appraisal questionnaires were used to collect information on child abuse and neglect, household challenges, and other socio-behavioral factors in the original CDC-Kaiser ACE Study."
  - The second paragraph states: "The questionnaires are not copyrighted, and there are no fees for their use. If you include the ACE Study questionnaires in your research, a copy of the subsequent article(s) is requested (send to [dvpinquiries@cdc.gov](mailto:dvpinquiries@cdc.gov))."
- Questionnaire Links:** Below the text, there are two sections:
  - Family Health History Questionnaire:**
    - [Male Version](#) [183KB]
    - [Female Version](#) [PDF 196KB]
  - Health Appraisal Questionnaire:**
    - [Male Version](#) [PDF 208KB]
    - [Female Version](#) [PDF 109KB]
- Navigation:** At the bottom of the main content area, there are expandable sections for "Data and Statistics" and "Major Findings", each with a "+" icon. A "Top of Page" link is also present.
- Page Information:** At the bottom right, it says "Page last reviewed: April 6, 2021" and "Content source: National Center for Injury Prevention and Control, Division of Violence Prevention".
- Footer:** A dark footer bar with the following sections:
  - HAVE QUESTIONS?** with a "Visit CDC.INFO" link.
  - CDC INFORMATION** with a link to "About CDC".
  - Privacy** with a link to "FOIA".
  - CONNECT WITH CDC** with social media icons for Facebook, Twitter, YouTube, and Instagram.



## Appendix H: Parental Reflective Functioning Questionnaire Permission



The screenshot shows a web browser window with the URL <https://www.ucl.ac.uk/psychoanalysis/research/parental-reflective-functioning-questionnaire-prfq>. The page content is as follows:

**Availability**

On this website, we make available the [18 items](#) and [scoring syntax](#) in English, and translations of the 18 items in the various languages that are currently available. Validation studies of each of the translations will be made available in the future.

The PRFQ is freely available to download for research purposes only. The measure is not yet suited for clinical purposes.

Note: Some researchers have contacted us asking for a 39-item version of the measure. There is, however, no 39-item version, only an 18-item version.

- [Chinese version](#)
- [Danish version](#)
- [Dutch version](#)
- [English version](#)
- [Finnish version](#)
- [French version](#)
- [German version](#)
- [Hebrew version](#)
- [Italian version](#)
- [Portuguese version](#)
- [Spanish version](#)
- [Spanish \(MX\) version](#)
- [Swedish version](#)
- [Turkish version](#)

## Appendix I: Joyful Life Scale Permission

