Impact of Parent and Child Factors on Parenting Mindfulness and Parenting Stress

by

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DISSERTATION ABSTRACT

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Parenting stress is a common experience, but the amount caregivers experience can vary. Within the caregiver-child dyad, both caregiver and child-level factors can influence parenting stress. For caregivers, the link between parental adverse childhood experience (ACE) history and greater parenting stress is well-established. Caregivers' level of parenting mindfulness, on the other hand, is associated with reduced parenting stress, and research has found that individuals with ACE history tend to have reduced levels of mindfulness. Greater child socioemotional skills are also associated with reduced parenting stress. However, it is not known whether caregivers' levels of parenting mindfulness and their child's socioemotional skills can serve as protective factors against parenting stress among caregivers with ACE history. Certain executive functions, such as attentional control (AC) and inhibitory control (IC), are thought to help support individuals' mindfulness skills. However, it is not known how AC and IC are associated with parenting-specific mindfulness. This dissertation examined the moderating roles of parenting mindfulness and child socioemotional skills in the association between parental ACE history and parenting stress in two samples of caregivers of preschool-aged children ($N = 281$). This dissertation also examined the associations between caregivers' AC and IC and their levels of parenting mindfulness with one of the samples of caregivers of preschool-aged children ($n = 91$) by running multiple linear regression models. Results from the first set of analyses showed that parental ACE history was positively associated with parenting stress while parenting mindfulness and child socioemotional skills were negatively associated with parenting stress, but

there were no moderating effects of either parenting mindfulness or child socioemotional skills in the association between ACEs and parenting stress. Results from the second set of analyses revealed that neither AC nor IC were significantly associated with overall parenting mindfulness or any of the three subscales. These findings suggest that parenting mindfulness and child socioemotional skills are associated with lower levels of parenting stress, but they may not serve as moderators in the association between parental ACE history and parenting stress among caregivers of preschool-aged children, and that AC and IC are not significant contributors to parenting mindfulness.

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CHAPTER I

INTRODUCTION

Stress from caregiving for a child, referred to as parenting stress (Abidin, 1992), is a common experience (Office of the Surgeon General [OSG], 2024). However, the amount of stress caregivers experience can vary. For example, caregivers of children who exhibit better socioemotional skills tend to experience less stress compared to caregivers of children who exhibit poorer socioemotional skills (Bender & Carlson, 2013). Additional factors that may influence the stress caregivers experience from parenting include the caregivers' own childhood experiences—especially the parenting that they themselves received—and how caregivers attend to themselves and their child in the present moment (i.e., parenting mindfulness). As shown in Figure 1, below, the present dissertation will examine the association between parental history of adverse childhood experiences (ACE) and parenting stress, the moderating roles of parenting mindfulness and child socioemotional skills on this association, and how facets of parental self-control (attentional control, inhibitory control) are associated with parenting mindfulness.

Caregiver-level factors such as parental ACE history and current levels of parenting mindfulness can influence caregivers' reactions to challenging child behavior and associated parenting stress in opposite directions. While parental ACE history is associated with higher levels of perceived parenting stress in adulthood (Lange et al., 2019; Madsen et al., 2022), caregivers' levels of parenting mindfulness are associated with reduced stress (Fernandes et al., 2021). Individuals with ACE history tend to show reduced levels of individual mindfulness (Beshai & Parmar, 2018; Boughner et al., 2016; Dolbier et al., 2021; Fitzgerald, 2022; Fox et al., 2024; Huang et al., 2021; McKeen et al., 2023), suggesting that mindfulness may be a powerful tool that caregivers with a history of ACEs could use to manage their parenting stress. Recent

studies have demonstrated that mindfulness interventions applied to the parenting context improve overall parenting mindfulness (Cho & Shin, 2025) and reduce levels of parenting stress (Cho & Shin, 2025; Lyu & Lu, 2023) among caregivers with ACE history. However, it remains unknown how trait, or baseline, levels of mindfulness may function to buffer the link between parental ACEs and parenting stress. Investigating this gap is important, because trait mindfulness is likely more stable than mindfulness skills learned from brief mindfulness interventions. Further, testing these associations in community samples contributes to our understanding of the buffering effects of mindfulness on parenting stress in samples not explicitly trained in mindfulness, which is likely much more common in the real world. Indeed, only one study currently exists that examines the association between trait-level parenting mindfulness and parenting stress in any population (Fernandes et al., 2021).

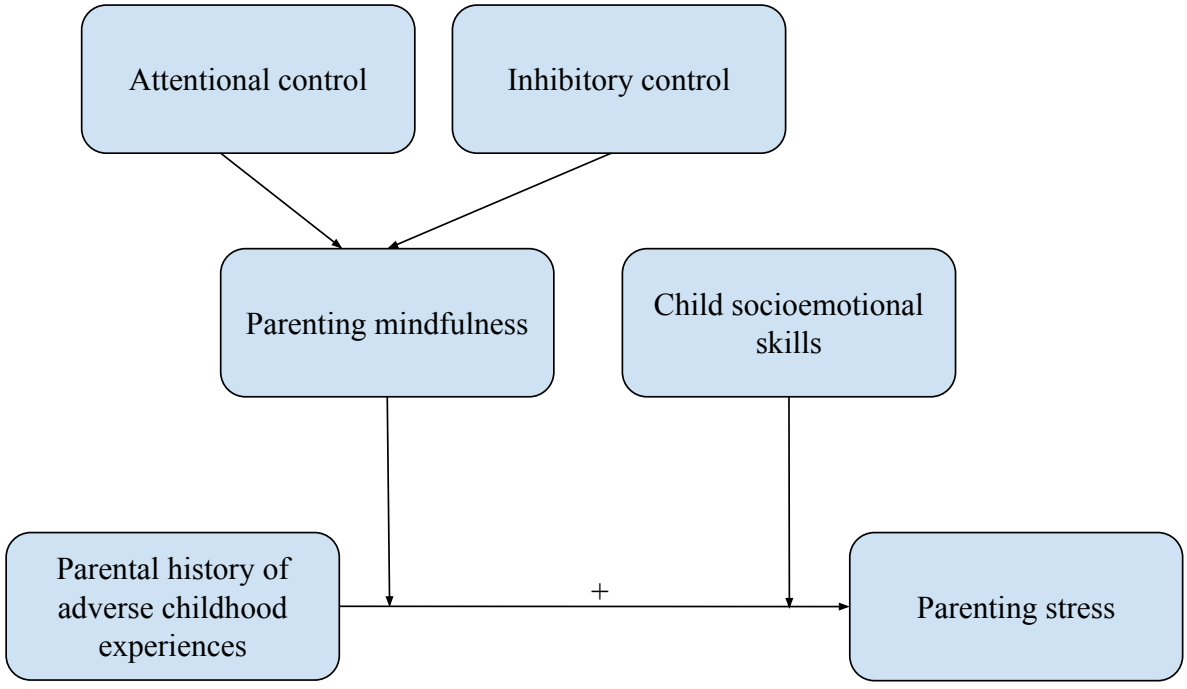

Figure 1. Theoretical Model Underlying Dissertation

Child-level factors are also associated with parenting stress. For example, children who have better socioemotional skills (e.g., initiative, self-regulation, attachment) receive more positive responses from caregivers and have more frequent positive parent-child interactions, which is associated with reduced parent stress (Bender & Carlson, 2013). While much work in this area focuses on challenging child behavior such as internalizing/externalizing behaviors, which are associated with higher levels of parenting stress (Fang et al., 2024; Kochanova et al., 2022; Kwon et al., 2022; McDaniel & Radesky, 2020), focusing on the presence of these behaviors can miss children who may not yet show these more extreme behaviors but still struggle with a lack of socioemotional skills (e.g., initiative, attachment, and self-regulation). Indeed, some work has shown that a lack of child socioemotional skills is more strongly associated with parenting stress than the presence of challenging behaviors like internalizing/externalizing behaviors (Anthony et al., 2005; Bender & Carlson, 2013). Child socioemotional skills may decrease the strength of the association between parental ACE history and parenting stress, as these children likely require fewer resources from the caregiver.

Individuals vary in their levels of parenting mindfulness, which may be due to individual differences in two key cognitive components of mindfulness: attentional control (AC) and inhibitory control (IC). Trait mindfulness is associated with increased AC (J. J. Walsh et al., 2009; Moore & Malinowski, 2009) and IC (Moore & Malinowski, 2009) in adults, and mindfulness interventions have been found to increase individuals' AC (Chin et al., 2021; K. M. Walsh et al., 2019) and IC (Heeren et al., 2009). Thus, it follows that caregivers with higher levels of parenting mindfulness would also have better AC and IC compared to caregivers with lower levels of parenting mindfulness, yet this has not been tested to date. Monitor and Acceptance Theory (MAT; Lindsay & Creswell, 2017) suggests that the mechanisms of

mindfulness interventions in reducing stress and stress-related health outcomes include improved attention monitoring and acceptance of one's experience. Existing work in this area suggests that acceptance may be more important for improving stress-related outcomes (e.g., Chin et al., 2019; Lindsay et al., 2017, 2018), indicating that IC—which supports the nonjudgment and nonreactivity aspects of mindfulness (Lindsay & Creswell, 2017)—may play a stronger role in parenting mindfulness compared to AC. Understanding which aspects of cognition are associated with parenting mindfulness will help to inform future parenting mindfulness research and identify precise targets for parenting interventions.

To address these gaps in the literature, the current dissertation investigates child socioemotional skills and parenting mindfulness as separate moderators in the association between parental ACE history and parenting stress, and examines the associations between experimental measures of parents' AC and IC with self-reported parenting mindfulness. This work uses two separate existing data sets collected from parents of preschool-aged children. The first study (Chapter II), on child socioemotional skills and parenting mindfulness as potential moderators of the association between parent ACE history and parenting stress, combines data from both data sets, while the second study, on AC, IC, and parenting mindfulness (Chapter III), uses data from one data set.

CHAPTER II

STUDY 1

Many different caregiver, child, and contextual variables are linked to the stress that caregivers experience from parenting their children. The most salient variable is the behavior of the child: more frequent and intense child behavioral problems are associated with greater parenting stress (Biondic et al., 2019). However, individual parent factors are also implicated in how stressful parents find these child behaviors to be. For example, parental ACE history is associated with higher levels of perceived parenting stress in adulthood (Lange et al., 2019; Madsen et al., 2022). Conversely, higher levels of parenting mindfulness, which indexes the degree to which parents attend to themselves and their children without judgment or reactivity while parenting (Duncan et al., 2009), tend to be associated with reduced parenting stress (Fernandes et al., 2021).

Child Behavior and Parenting Stress

How researchers measure child behavior associated with parenting stress varies, but parent-report tools are most common. Some of these tools, such as the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) and Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), quantify the frequency, duration, and magnitude of challenging child behaviors. These child behaviors can be categorized by target: behaviors that are directed inward are referred to as internalizing (e.g., depression, anxiety) while behaviors directed outward are referred to as externalizing (e.g., aggression, destruction) (Kochanova et al., 2022). There is an abundance of literature on the associations between child internalizing/externalizing behaviors and parenting stress, showing that child internalizing (Kochanova et al., 2022) and externalizing behaviors are associated with greater parenting stress (Fang et al., 2024; Kochanova et al., 2022;

Kwon et al., 2022; McDaniel & Radesky, 2020). Externalizing behaviors tend to be more strongly associated with parenting stress compared to internalizing behaviors (Barroso et al., 2018), which is likely due to the more disruptive consequences resulting from externalizing behaviors, whereas internalizing behaviors are often less likely to be noticed by caregivers (Wang & Anderson, 2018). Though internalizing and externalizing behaviors are important for child outcomes and parenting, only focusing on the presence of these behaviors can miss children who may not yet show these more extreme behaviors but still struggle with a lack of socioemotional skills. Indeed, a lack of socioemotional skills in a child can also be a stressor for caregivers (Yu et al., 2025).

Another way of measuring child behavior associated with parenting stress is a lack of child socioemotional skills. Child socioemotional skills promote healthy development and help mitigate the effects of stress (Sattler & Font, 2018), and include initiative, self-regulation, and attachment (Bender & Carlson, 2013). Children who have better socioemotional skills tend to have healthier development and reduced risk of psychopathology, even in the presence of stress (Keane & Evans, 2022; Sattler & Font, 2018). These children also receive more positive responses from caregivers and have more positive parent-child interactions compared to children with poorer socioemotional skills (Bender & Carlson, 2013). Conversely, fewer child socioemotional skills are associated with greater parenting stress (Bender & Carlson, 2013). Children who have low initiative, self-regulation, and/or attachment tend to have caregivers who are more stressed (Bender & Carlson, 2013), likely because these children have more needs, which require more time and energy from the caregiver.

There are several reasons why it may be more beneficial for researchers to focus on poor socioemotional skills to complement the research on developmental outcomes associated with

the presence of behavioral concerns like internalizing and/or externalizing behaviors. First, while the presence of such behavioral concerns can be alarming and often requires caregiver management or intervention, poor socioemotional skills are often more common (e.g., low levels of initiative) and also influence parenting stress despite being less extreme (Bender & Carlson, 2013). Second, internalizing and externalizing behaviors are often observable problematic behaviors, while poorer socioemotional skills increase risk for developing internalizing and/or externalizing behaviors in ways that can be unseen by caregivers (Schultz et al., 2009). Third, a lack of socioemotional skills is more strongly associated with parenting stress than is the presence of challenging behaviors like internalizing and externalizing behaviors (Anthony et al., 2005; Bender & Carlson, 2013). Fourth, fewer socioemotional skills such as social competence, adaptive functioning skills, and peer relationships are also associated with increased internalizing and externalizing behaviors in children (Schultz et al., 2009). Lower self-regulation in children is also associated with increased mental health problems (Sattler & Font, 2018) and lower cognitive resilience (Sattler & Font, 2018). Lastly, examining socioemotional skills may also enable early intervention before internalizing and externalizing behaviors become problematic, serving as buffers against these behaviors and parenting stress, which likely improves the parent-child relationship.

Caregiver Adverse Childhood Experiences (ACEs) History and Parenting Stress

Caregiver-level factors, such as caregivers' exposure to adverse childhood experiences (ACEs), can also influence parents' reactions to challenging child behavior and associated parenting stress. Parental ACE history is associated with higher levels of perceived parenting stress in adulthood (Lange et al., 2019; Madsen et al., 2022). Researchers have discussed many different potential mechanisms underlying the relationship between parental ACE history and

later parenting stress. One possible mechanism is the effects of ACEs on individuals' stress-response systems (Lange et al., 2019). The effects of ACEs can accumulate over time and result in dysfunction of the stress-response systems by constantly activating the stress-response systems throughout childhood, referred to as allostatic load (Jakubowski et al., 2023). Due to high allostatic load, individuals with ACE history may experience particular challenges when encountering additional stressors in adulthood (Lange et al., 2019). These challenges are often due to dysregulation of the biological stress response, which results in increased perceived stress (Lange et al., 2019). Parenting can be a stressful experience (Ren et al., 2024); thus, it holds that these mechanisms are applicable to caregivers with ACE history as well.

Other potential mechanisms discussed in the literature include psychopathology (e.g., depression, anxiety), a lack of social support associated with parental ACE history, and intergenerational parenting practices (Bögels et al., 2010; Lange et al., 2019; Madsen et al., 2022; Racine et al., 2021). ACE history increases the likelihood that an adult will develop mental health symptoms (Racine et al., 2021), which can then be exacerbated by the presence of significant challenging child behaviors (Lange et al., 2019). Parenting stress occurs when a parent perceives that the demands of the parental role (e.g., challenging child behavior) are greater than their resources (Abidin, 1992; Lazarus et al., 1985). One important resource known to buffer against stress is social support (Lange et al., 2019; Madsen et al., 2022). However, ACE history is associated with insecure attachment (e.g., Corcoran & McNulty, 2018), which can result in maladaptive internal working models of the self and others in adulthood (Bowlby, 1988). For caregivers, this may show up in the caregiving context (Steele et al., 2016) via lower levels of perceived social support (Madsen et al., 2022), increasing parenting stress (Madsen et al., 2022). Finally, parental ACE history may be associated with parenting stress and how

caregivers react to their child's challenging behavior via the parenting caregivers received as children, or intergenerational transmission of parenting. Without intervention, caregivers tend to automatically repeat the dysfunctional parenting practices that they experienced as children by their own caregivers (Bögels et al., 2010). For example, if their parents demonstrated high levels of stress trying to manage child behavior and reacted negatively (e.g., harsh punishment), the children will likely grow up to be parents who continue the same pattern with their own children.

ACE History and Individual Mindfulness

Individuals who have higher ACEs scores tend to have lower scores on trait mindfulness (Beshai & Parmar, 2018; Boughner et al., 2016; Dolbier et al., 2021; Fitzgerald, 2022; Fox et al., 2024; Huang et al., 2021; McKeen et al., 2023). Higher levels of trait mindfulness are thought to serve as protective factors buffering against the deleterious effects of ACEs: mindfulness in individuals with ACEs is associated with reduced negative effects of ACEs on psychological wellbeing (Huang et al., 2021) and decreased psychopathology associated with ACE history (Beshai & Parmar, 2018; Boughner et al., 2016; Dolbier et al., 2021; Fitzgerald, 2022; Fox et al., 2024; McKeen et al., 2023). Studies have also found that mindfulness interventions are associated with reduced psychopathology (Joss et al., 2019; Ortiz & Sibinga, 2017), improved emotion regulation (Caldwell & Shaver, 2015), and reduced stress (Joss et al., 2019) across diverse samples of individuals with ACE history.

Potential mechanisms underlying the negative association between ACEs and trait mindfulness discussed in the literature include increased negative affect (McKeen et al., 2023), dissociation (Boughner et al., 2016; McKeen et al., 2023), rumination (Fox et al., 2024), reduced ability to describe one's emotions (McKeen et al., 2023), and judgment toward one's own thoughts and emotions (Beshai & Parmar, 2018; Dolbier et al., 2021; McKeen et al., 2023) often

experienced by individuals with ACE history. These cognitions, emotions, and behaviors are in opposition to mindfulness, so it follows that individuals with ACE history would tend to have lower levels of trait mindfulness.

The association between ACEs and psychopathology (e.g., depression, anxiety) is well-established (Joss et al., 2019). However, individuals with ACE history have reduced levels of psychopathology after participating in general, non-parenting-specific mindfulness interventions compared to individuals with ACE history who do not participate in mindfulness interventions (Joss et al., 2019). These effects are thought to be due to an increased ability to reduce their negative biases, interpretations, and emotions by increasing attention, awareness, and non-judgment; reduced rumination; and increased self-compassion (Joss et al., 2019). In addition, individuals with ACEs who participate in general mindfulness interventions tend to show improved emotion regulation compared to individuals with ACEs who do not participate in mindfulness interventions (Caldwell & Shaver, 2015). Potential mechanisms underlying these effects include improving emotional clarity and reducing rumination (Caldwell & Shaver, 2015). These findings support the idea that mindfulness skills can serve as a protective factor against the effects of ACEs on psychopathology and emotion dysregulation (Caldwell & Shaver, 2015; Joss et al., 2019), which are also important for parenting (Rutherford et al., 2015).

Parent Mindfulness and Parenting Stress

There are other caregiver-level factors that also meaningfully correlate with parenting stress and other reactions to challenging child behavior. For example, a sense of parental competence is associated with reduced parenting stress (Fang et al., 2024). In this vein, parents' trait levels of general mindfulness—how much they openly attend to their experience in the present moment (Brown & Ryan, 2003)—are also associated with reduced perceived stress

(McBride et al., 2022). Similarly, general mindfulness interventions have been shown to reduce emotional reactivity in response to stressors in adults (Britton et al., 2012). It has been hypothesized that these mindfulness interventions decrease perceived stress and stress reactivity in adults by helping individuals improve their awareness of their thoughts and emotions, and practice non-judgment and non-reactivity in response to those thoughts and emotions (Chaplin et al., 2018). General mindfulness interventions tend to consist of the following goals: increase present-centered awareness, increase awareness and compassion toward thoughts and emotions, and respond to thoughts and emotions with non-judgment and non-reactivity (Chaplin et al., 2018). Thus, parenting mindfulness may be associated with parenting stress in similar ways that individual mindfulness is associated with general life stress in adults.

Caregivers' levels of parenting mindfulness are associated with parenting stress: caregivers who report higher levels of parenting mindfulness tend to report lower levels of parenting stress (Fernandes et al., 2021). Similar to the work on general mindfulness, intervention studies have clarified the direction of this association: caregivers who received mindful parenting training reported lower levels of parenting stress after the training compared to before the training (Kakhki et al., 2022; Potharst et al., 2017; Zeegers et al., 2019). Parenting mindfulness interventions have similar goals as ones addressing general mindfulness: present-centered awareness in interactions with their child, increase awareness and compassion toward parents' own thoughts and emotions in parenting contexts, increase awareness and compassion toward their child's emotions and behaviors, respond to parents' own thoughts and emotions in parent-child interactions with non-judgment and non-reactivity, and respond to their child's emotions and behaviors with non-judgment and non-reactivity (Chaplin et al., 2018).

Both general and parenting mindfulness interventions are thought to help reduce general life stress and stress specific to parenting by reducing parents' automatic responses and behaviors (Bögels et al., 2010; Chaplin et al., 2018). The focus on non-judgment and non-reactivity in mindfulness helps caregivers to be more aware and accepting of their own feelings of stress in parent-child interactions. This awareness, then, can help caregivers better understand their child's behaviors, which may result in perceiving those behaviors as less challenging (Fernandes et al., 2021). Mindful awareness can also help caregivers avoid judging themselves when they do experience stress, which serves to reduce the reactive responses to child behaviors that can increase caregivers' level of stress (Fernandes et al., 2021). In addition, increased levels of parenting mindfulness can reduce caregivers' negative attentional bias toward their child by providing a more open and non-judgmental view of their child's behavior, providing opportunities for more positive perspectives of their child and less parenting stress as a result (Bögels et al., 2010).

Parenting Mindfulness and Child Outcomes

Children of caregivers who practice parenting mindfulness tend to have better social-emotional development (Cheung et al., 2021; Lönnberg et al., 2021; Xi et al., 2024), and improved emotional (Lin et al., 2025; Zhang et al., 2024), behavioral (Cheung et al., 2021), and psychological outcomes (Gouveia et al., 2018) compared to children of caregivers who do not practice parenting mindfulness. These children show better self-regulation (Cheung et al., 2021; Xi et al., 2024), including specifically better emotion regulation (Cheung et al., 2021; Lin et al., 2025; Xi et al., 2024; Zhang et al., 2024), demonstrate improved dyadic communication compared to children of caregivers who practice less parenting mindfulness (Lönnberg et al., 2021), and exhibit stronger parent-child attachment (Zhang et al., 2024). Parenting mindfulness

is also associated with decreased child internalizing and externalizing behaviors (Cheung et al., 2021) and lower levels of depressive symptoms in children (Gouveia et al., 2018). Although the positive outcomes related to parenting mindfulness are well-established, research examining how parenting mindfulness may serve as a protective factor against parenting stress among caregivers with ACE history is scarce. One could easily see how the directionality of the association between parent mindfulness, child behavior, and parenting stress could be reversed: it may be easier to be non-judgmental and present-focused when you have a child who is easy to parent and you have lower perceived stress. Thus, it is important to investigate how parenting mindfulness and child factors may be associated with parenting stress among caregivers with ACE history to identify targets for interventions with parents and families to increase positive child outcomes and parent-child interactions.

Current Study

Recent studies have demonstrated that mindfulness interventions applied to the parenting context improve overall parenting mindfulness (Cho & Shin, 2025) and reduce levels of parenting stress (Cho & Shin, 2025; Lyu & Lu, 2023) among caregivers with ACE history. However, there are known no studies examining trait-level associations between parental ACE history and caregivers' parenting mindfulness. There are several reasons why it is important to address this gap in the literature. First, trait mindfulness is likely more stable than mindfulness skills learned from brief mindfulness interventions. Second, there is likely more variation in levels of parenting mindfulness in a sample that has not specifically participated in mindfulness interventions. Separately, parental ACE history may interact with child socioemotional skills to impact parenting stress, such that caregivers of children with greater socioemotional skills may show reduced parenting stress even with ACE history, serving as a protective effect. Some

research has shown that fewer child socioemotional skills are associated with greater parenting stress compared to even internalizing/externalizing behaviors (Anthony et al., 2005; Bender & Carlson, 2013). Since ACE history is associated with greater perceived parenting stress (Lange et al., 2019; Madsen et al., 2022), a child with fewer socioemotional skills could be a big stressor for them, likely due to the allostatic load as discussed previously (Lange et al., 2019), leading to even greater parenting stress acting like a double risk. On the other hand, a child with greater socioemotional skills could serve as a protective factor against greater parenting stress associated with parental ACE history.

The objectives of the current study are to (1) investigate the degree to which caregivers' levels of parenting mindfulness buffer the association between ACE history and parenting stress among caregivers of preschool-aged children, and (2) test the degree to which child socioemotional skills buffer the association between parental ACE history and parenting stress.

Research Questions and Hypotheses

RQ 1: How does parenting mindfulness affect the association between parental ACE history and parenting stress?

H1: Parenting mindfulness will moderate the association between parental ACE history and parenting stress, such that parents who report higher levels of parenting mindfulness will experience less parenting stress related to higher numbers of ACEs than parents who report lower levels of parenting mindfulness.

RQ 2: How do child socioemotional skills affect the association between parental ACE history and parenting stress?

H2: Child socioemotional skills will moderate the association between parental ACE history and parenting stress, such that parents who report greater child socioemotional skills will

experience less parenting stress related to higher numbers of ACEs than parents who report fewer child socioemotional skills.

Method

Sample

This study combined the data from two different samples to answer the research questions. One sample (n = 91) consisted of participants from the Parent Child Self-Regulation (PCSR) Study (Giuliani et al., 2021), and the other sample (n = 198) consisted of participants from the Emotion Dynamics Study (Cox et al., 2024) for a total sample size of 289. An *a priori* power analysis using G*Power 3.1 indicated that a total sample of N = 264 was required to detect a small effect size (f^2 = 0.03) at 80% power with an alpha of 0.05 and 6 total predictors (1 tested predictor, 2 main effects predictors, and 3 covariates) for a moderation analysis.

All participants were caregivers of preschool-aged children. The total sample consisted mainly of participants who identified as mothers. In the PCSR Study, participants (mother-child dyads) were recruited for a larger, two-session in-person study in the Pacific Northwest. Inclusion criteria for the PCSR Study included biological mothers (at least 18-years-old) of a three- to five-year-old child who they were with at least 50% of the time each week, their child had not yet been in kindergarten, and mothers anticipated that their child would be capable of completing the three-hour parent-child study session. Exclusion criteria included mothers who reported that English was not their primary language, mothers with a significant neurological disorder history, mothers with contraindications for magnetic resonance imaging (MRI) such as braces, mothers who had an open or active child welfare case, and children known or suspected to have sensory sensitivities or developmental delay. In the Emotion Dynamics Study, participants were recruited nationally for a larger experience sampling study, and all study

procedures were completed remotely. Inclusion criteria for the Emotion Dynamics Study included primary caregivers (defined as at least 50% custody for the last 12 months) of children aged 18 months to five-years-old and English language fluency. Exclusion criteria included caregivers with less than 50% custody of their child for the last 12 months.

Procedure

The current study is a secondary analysis of data collected in the PCSR and the Emotion Dynamics Studies. The PCSR study procedures included two different sessions: one including parent-report surveys, tasks completed by the child, and video-recorded parent-child interactions, and a second where mothers completed tasks while undergoing MRI brain scans. The present analyses only include survey data collected via computer before or during Session One.

The Emotion Dynamics Study dataset comes from a larger experience sampling study examining caregivers' reports of their own emotions and their child's emotions. Participants completed an application/intake form that included demographics questions and a series of surveys at the beginning of the study. They reported data about their emotions in the moment by responding to text message prompts three times per day for seven days, answering questions about their strongest emotion and their child's strongest emotion in the last four hours. All data from the Emotion Dynamics dataset used for the present analyses were from the surveys. Importantly, caregivers in both the PCSR and Emotion Dynamics studies completed the same versions of the surveys detailed below.

Measures

Adverse Childhood Experiences (ACEs) Scale Adult Version

The Adverse Childhood Experiences (ACEs) Scale Adult Version (Felitti et al., 1998) is a self-report survey measuring adults' retrospective experiences of childhood adversity. The

ACEs Scale is a ten-item survey that asks whether individuals experienced each type of childhood adversity. ACEs are defined as experiences that occur before the age of 18 such as abuse and neglect (Felitti et al., 1998). The ACEs Scale only assesses whether the individual experienced each type of adversity at all (presence or absence) and does not assess frequency or severity of each type of childhood adversity. For each item (type of childhood adversity), individuals write the number "one" next to that item if they experienced that type of childhood adversity and leave the space blank if they did not experience that type of childhood adversity. Then, at the end, individuals add up their "ones" to get a total ACEs score ranging from zero to 10. The ACE types included in the ACEs Scale include physical, emotional, and sexual abuse; physical and emotional neglect; and household dysfunction such as household substance use. All items begin with, "While you were growing up, during your first 18 years of life:" Example items include, "Was a household member depressed or mentally ill, or did a household member attempt suicide?" and "Did you live with anyone who was a problem drinker or alcoholic or used street drugs?" Some items include, "often or very often" (i.e., "Did a parent or other adult in the household often or very 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?") while some include, "ever" (i.e., "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 Attempt or actually have oral, anal, or vaginal intercourse with you?"), and one item includes "sometimes, often, or very often" ("Was your mother or stepmother sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard?"). The total ACEs score is used for the present analyses.

Parenting Stress Index – Version 4 – Short Form (PSI-4-SF)

The Parenting Stress Index – Version 4 – Short Form (PSI-4-SF) (Abidin, 2012) is a self-report measure of perceived stress related to caregiving a child. Caregivers respond to each item on a five-point Likert scale ranging from (1) *strongly agree* to (5) *strongly disagree*. The PSI-4-SF consists of three subscales and a total parenting stress score. The subscales include parental distress (PD), parent-child dysfunctional interactions (P-CDI), and difficult child (DC). The PD subscale measures parenting stress in relation to individual caregiver factors. An example of an item on the PD subscale is: "I feel trapped by my responsibilities as a parent." The P-CDI subscale measures parenting stress in relation to parent-child interactions and includes items such as, "When I do things for my child, I get the feeling that my efforts are not appreciated very much." The DC subscale measures parenting stress related to child-level factors and includes items such as, "My child seems to cry or fuss more often than most children." All 36 items from all three subscales are summed to create a total parenting stress score. The PSI-4-SF is initially scored so that higher scores represent lower levels of parenting stress, but all items are reverse-scored prior to analyses so that higher scores represent higher levels of parenting stress. The current study uses the total parenting stress scores. PSI total scores showed excellent reliability in the PCSR ($\alpha = 0.939$) and Emotion Dynamics ($\alpha = 0.904$) datasets.

Interpersonal Mindfulness in Parenting Scale (IM-P)

The Interpersonal Mindfulness in Parenting Scale (IM-P) (Duncan, 2007) is a self-report measure of caregivers' levels of mindfulness related to their parenting. Caregivers respond to 10 items on a five-point Likert scale ranging from (1) *never true* to (5) *always true*. The IM-P includes three subscales and a total parenting mindfulness score. The subscales include awareness and present-centered attention, non-judgment, and non-reactivity. Examples of items in each of the three subscales respectively include, "I am aware of how my moods affect the way

I treat my child," "Even when it makes me uncomfortable, I allow my child to express his/her feelings," and "When I'm upset with my child, I notice how I am feeling before I take action." The total parenting mindfulness score is created by summing the three subscales. Higher scores on each subscale and higher total parenting mindfulness scores indicate higher levels of parenting mindfulness. The current study only examined total parenting mindfulness scores for the main analyses. Total IM-P scores showed acceptable internal consistency in the PCSR dataset ($\alpha = 0.674$) and good internal consistency in the Emotion Dynamics dataset ($\alpha = 0.753$). The four-item awareness and present-centered attention subscale showed unacceptable internal consistency in the PCSR sample ($\alpha = 0.272$) and in the Emotion Dynamics sample ($\alpha = 0.377$). However, limiting the variable to the two items that asked parents about how they pay attention to their child improved the internal consistency to acceptable levels for the awareness and present-centered attention subscale in both the PCSR sample ($\alpha = 0.65$) and in the Emotion Dynamics sample ($\alpha = 0.692$). The non-judgment subscale showed poor internal consistency in the PCSR sample ($\alpha = 0.503$) and acceptable internal consistency in the Emotion Dynamics sample ($\alpha = 0.619$). Finally, the non-reactivity subscale showed acceptable internal consistency in the PCSR sample ($\alpha = 0.620$) and in the Emotion Dynamics sample ($\alpha = 0.698$).

Devereux Early Childhood Assessment for Preschoolers Second Edition (DECA-P2)

The Devereux Early Childhood Assessment for Preschoolers Second Edition (DECA-P2) (LeBuffe & Naglieri, 2013) is a measure of child-level factors, completed by parents or teachers of preschool-aged children. The current study used a parent-report version. The DECA-P2 consists of three subscales related to child-level protective factors, a child total protective factors score (TPF), and a behavioral concerns (BC) scale. The three subscales related to child protective factors include initiative, self-regulation, and attachment/relationships. The DECA-P2 sums a

child TPF score by adding up the subscales of initiative, self-regulation, and attachment/relationships. These three subscales are comprised of nine items each for a total number of items of 27 for TPF. The initiative, self-regulation, and attachment/relationships subscales can also be examined individually. All items on the DECA-P2 begin with, "During the past four weeks, how often did the child…" An example item on the initiative subscale is: "show confidence in his/her abilities (for instance, say "I can do it!")?" An example item on the self-regulation scale is: "handle frustration well?" An example item on the attachment/relationships subscale is: "seem happy or excited to see his/her parent or guardian?" Higher TPF subscale scores indicate higher levels of child initiative, self-regulation, and attachment/relationships for each subscale. Higher TPF total scores indicate a greater number of child protective factors. There is also a behavioral concerns (BC) scale that sums all eleven items for a total BC score. The BC scale is comprised of both child internalizing and externalizing behaviors. Example items on the BC scale include, "seem sad or unemotional at a happy occasion?" and "use obscene gestures or offensive language?" Higher BC scores represent higher levels of child behavioral problems. Caregivers respond to each item on a five-point Likert scale ranging from *never* to *very frequently*. The current study only uses the TPF variable from the DECA-P2. Internal consistency for the DECA-P2 TPF variables in the PCSR Study was acceptable (α = 0.662). The DECA-TPF variables in the Emotion Dynamics dataset showed good internal consistency (α = 0.865).

Covariates

Covariates included in all models are child age, child sex, and a dummy-coded variable that accounts for study sample (PCSR or Emotion Dynamics) if t-tests show significant differences in primary variables (ACE total, PSI total, I-MP total, DECA-TPF total, and child

age). Child age was included as a covariate because different child ages have been associated with varying levels of parenting stress in the literature (e.g., Anderson, 2008; OSG, 2024; Qian et al., 2021). Child sex was also included as a covariate because some research has found that child sex is associated with different levels of parenting stress (e.g., Hartzell et al., 2020; Scher & Sharabany, 2005). In the PCSR Study, child age was collected from the Demographic Questionnaire completed by the caregiver. The questionnaire states at the beginning, "These questions are about the child you brought here with you today," and then the first item includes "age (yrs)." In the Emotion Dynamics Study, child age was reported by the caregiver in the application/intake form by filling out a response to "child age (in years)." The PCSR and Emotion Dynamics studies collected child sex/gender data differently. The PCSR study asked for caregivers to report their child's sex and included two options to choose from: female or male. The Emotion Dynamics study asked caregivers to report their child's gender identity and provided multiple options (girl, boy, gender-fluid, non-binary, or prefer not to answer). Most responses in the Emotion Dynamics dataset consisted of girls or boys and there was only one participant who selected gender fluid and two that selected "prefer not to answer"; those were recoded to N/A to make the variable consistent across samples.

Statistical Analysis

The data were examined for skew, kurtosis, and outliers. All key variables showed acceptable skew and kurtosis values. Both hypotheses were tested via moderated multiple regression (MMR) analyses. For the model addressing Hypothesis 1, the independent variable was parental history of ACEs from total ACE scores, the dependent variable was parenting stress from the PSI total scores, and the moderating variable was caregivers' level of parenting mindfulness from the IM-P total scores. For the model addressing Hypothesis 2, the IV and DV

were the same as the model for Hypothesis 1, but the moderator was child socioemotional skills from the DECA-P2 TPF total scores. Child age and sex were included as covariates in both models. Predictors were mean-centered for all models. Certain requirements for MMR such as the predictor and moderator variables not being too highly correlated ($r > 0.8$) have been checked and met. The regression assumptions of normality of residuals (inspected via Q-Q plot), homoscedasticity (inspected via residual vs fitted plot and Breusch-Pagan test $p > 0.05$), no multicollinearity (variance inflation factor [VIF] < 5), and influence (Cook's D) were tested for all models. Results of regression assumption tests and associated corrections are included in the results by model.

Results

Caregiver Demographics

Caregivers in the combined sample ranged from 20 to 65 years-old ($M = 33.87$, $SD = 5.54$, $n = 286$). Caregivers' annual income ranged from \$0 to \$500,000 ($M = \$98{,}305.84$, $SD = \$76{,}181.01$, $n = 280$, median = \$75,000). See Table 1 for additional caregiver demographics for the combined sample and by sample.

Child Demographics

Children in the combined sample ranged from 1 to 6 years-old ($M = 3.23$, $SD = 1.03$, $n = 286$). See Table 2 for additional child demographics for the combined sample and by sample.

Table 1

Caregiver Demographics by Sample

Variable	Emotion	PCSR	Full Sample
Age	34.22 (5.69)	33.07 (5.14)	33.87 (5.54)
Income (US$)	111,151.19 (82,478.6)	69,329.12 (48,754.38)	98,305.84 (76,181.01)
Sex			
Female	190 (96%)	91 (100%)	281 (97.2%)
Male	7 (3.5%)	0 (0%)	7 (2.4%)
Gender fluid	1 (0.5%)	0 (0%)	0 (0%)
Ethnicity			
Hispanic	35 (17.7%)	0 (0%)	35 (12.5%)
Non-Hispanic	163 (82.3%)	88 (96.7%)	251 (86.9%)
Race			
White	163 (82.3%)	78 (85.7%)	241 (83.4%)
Black	13 (6.6%)	0 (0%)	13 (4.5%)
Asian	6 (3%)	1 (1.1%)	7 (2.4%)
Latinx/Hispanic	1 (0.5%)	1 (1.1%)	2 (0.7%)
Mixed	8 (4%)	6 (6.6%)	14 (4.8%)

Note. Values are *M* (*SD*) for continuous variables and *n* (%) for categorical variables. Emotion Dynamics *N* = 198; PCSR *N* = 91; Full sample *N* = 289; Emotion = Emotion Dynamics Study; PCSR = Parent Child Self-Regulation Study.

Table 2

Child Demographics by Sample

Variable	Emotion	PCSR	Full Sample
Age	3.07 (1.1)	3.6 (0.74)	3.23 (1.03)
Sex/Gender			
Female/Girl	85 (42.9%)	42 (46.2%)	127 (43.9%)
Male/Boy	110 (55.6%)	46 (50.5%)	156 (54%)
Gender fluid	1 (0.5%)	0 (0%)	1 (0.3%)
Pref no answer	2 (1%)	0 (0%)	2 (0.7%)
Ethnicity			
Hispanic	45 (22.7%)	4 (4.4%)	49 (17%)
Non-Hispanic	153 (77.3%)	83 (91.2%)	236 (81.7%)
Race			
White	163 (82.3%)	78 (85.7%)	241 (83.4%)
Black	13 (6.6%)	0 (0%)	13 (4.5%)
Asian	6 (3%)	1 (1.1%)	7 (2.4%)
Latinx/Hispanic	1 (0.5%)	1 (1.1%)	2 (0.7%)
Mixed	8 (4%)	6 (6.6%)	14 (4.8%)
Native Am	1 (0.5%)	1 (1.1%)	2 (0.7%)
Other	2 (1%)	0 (0%)	2 (0.7%)

Note. Values are *M* (*SD*) for continuous variables and *n* (%) for categorical variables. Emotion Dynamics *N* = 198; PCSR *N* = 91; Full sample *N* = 289; Emotion = Emotion Dynamics Study; PCSR = Parent Child Self-Regulation Study; Pref no answer = prefer not to answer; Native Am = Native American. Emotion Dynamics Study assessed parent-reported child gender, whereas the PCSR study assessed parent-reported child sex.

Sample Differences

Independent samples t-tests were run on primary variables (ACE total, PSI total, I-MP total, DECA-TPF total, child age, and child sex/gender) to test sample differences to determine whether to include sample as a covariate in models. There was a significant difference in PSI total scores for the Emotion Dynamics sample (*M* = 81.86, *SD* = 18.74) and the PCSR sample (*M*

= 73.27, *SD* = 21.77); $t(149) = -3.22$, $p = 0.002$. There was also a significant difference in DECA-TPF total scores for the Emotion Dynamics sample (*M* = 104.18, *SD* = 9.6) and the PCSR sample (*M* = 109.57, *SD* = 9.22); $t(170.6) = 4.49$, $p < 0.001$. Finally, there was a significant difference in child age for the Emotion Dynamics sample (*M* = 3.07, *SD* = 1.1) and the PCSR sample (*M* = 3.6, *SD* = 0.74); $t(241.5) = 4.84$, $p < 0.001$. A chi-square test showed that sample differences in child sex/gender were not significant, $\chi^2(1, N = 283) = 0.27$, $p = 0.6$. Due to significant differences between the PCSR and Emotion Dynamics samples on the PSI total, DECA-TPF total, and child age variables, sample was controlled for (using a dummy coded variable where 0 = Emotion Dynamics and 1 = PCSR) in all models.

Correlations

Pearson correlations were run on key variables (total ACEs, total parenting stress, total parenting mindfulness, child socioemotional skills, child age) across the full analytical sample, adjusting for multiple comparisons using the Benjamini-Hochberg (BH) method (Benjamini & Hochberg, 1995). See Table 3 for correlation results and descriptive statistics.

Missing Data

Entire measure missingness related to primary variables included in models was minimal in the sample (ranged from 0-3%) and appeared to be missing at random (MAR), so complete cases were included in each model. With this low level of missingness and MAR, bias and power lost is minimal, so it is believed that multiple imputation (MI) may introduce unnecessary complexity (Graham et al., 2007; Kang, 2013). Item-level missingness was also minimal. Two participants were just missing one item from the PSI-4-SF so mean-person imputation was used to account for that missing data. Regression models 1 and 2 had a total sample size of 281.

Table 3

Means, Standard Deviations, and Correlations with Confidence Intervals for Key Variables from Combined PCSR and Emotion Dynamics Samples

Variable	*M*	*SD*	1	2	3	4
1. ACE total	2.53	2.41				
2. PSI total	79.19	20.09	.18** † [.06, .29]			
3. I-MP total	37.13	4.03	.13* [.02, .25]	-.45**† [-.53, -.35]		
4. DECA TPF	105.83	9.79	-.02 [-.13, .10]	-.45**† [-.54, -.36]	.33**† [.22, .43]	
5. Child age	3.23	1.03	-.05 [-.17, .07]	.01 [-.11, .12]	-.07 [-.18, .05]	.03 [-.08, .15]

Note. ACE = adverse childhood experiences; PSI = Parenting Stress Index; I-MP = Interpersonal Mindfulness in Parenting Scale; DECA = Devereaux Early Childhood Assessment; TPF = total protective factors; *M* = mean; *SD* = standard deviation. Values in square brackets indicate the 95% confidence interval for each correlation. * indicates $p < .05$. ** indicates $p < .01$. † indicates correlations remain significant after Benjamini-Hochberg (BH) correction.

Regression Model 1

An MMR model was conducted to examine how level of parenting mindfulness affects the association between parental history of ACEs and parenting stress. A weighted least squares (WLS) model was run due to violations of homoscedasticity in the regression model. All other regression assumptions were met. The overall model that included both ACEs and overall parenting mindfulness as independent variables accounting for variance in parenting stress, and included study sample and child age and sex as covariates, was statistically significant, $F(6, 274) = 20.46$, $p < 0.001$, and accounted for about 29% of the variance in parenting stress ($R^2 = 0.29$). ACEs were positively associated with parenting stress, $B = 2.1$, $SE = 0.46$, $t(274) = 4.6$, $p < 0.001$. Parenting mindfulness was negatively associated with parenting stress, $B = -2.28$, $SE =$

0.25, $t(274) = -9.02$, $p < 0.001$. However, the two-way interaction between ACEs and parenting mindfulness as independent variables accounting for variance in parenting stress was not significant in this model, $B = -0.01$, $SE = 0.11$, $t(274) = -0.13$, $p = 0.89$, 95% CI [-0.24, 0.21]. The CI for the two-way interaction is narrowly centered near zero, which suggests little to no meaningful effect. See Table 4.

Table 4

Moderated Multiple WLS Regression Model 1 Main Effects and Interaction: Total Parenting Stress as Outcome

Effect	Unstandardized Estimate	*SE*	95% CI		*p*
			LL	*UL*	
Intercept	82.15**	3.43	75.41	88.9	< 0.001
ACE total	2.10**	0.46	1.2	3.1	< 0.001
I-MP total	-2.28**	0.25	-2.77	-1.78	< 0.001
Child age	0.19	1	-1.77	2.15	0.85
Gender- f	-3.26	1.96	-7.12	0.6	0.1
Sample- PCSR	-7.37**	2.14	-11.58	-3.16	< 0.001
ACE x I-MP	-0.01	0.11	-0.24	0.21	0.89

Note. $N = 281$. *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; ACE = adverse childhood experiences; I-MP = Interpersonal Mindfulness in Parenting Scale; f = female; male used as reference group; PCSR = Parent Child Self-Regulation Study; Emotion Dynamics sample used as reference group; ACE x I-MP = ACE total and I-MP total 2-way interaction.

Exploratory Regression Model 1: Awareness and Present-Centered Attention Subscale

An exploratory MMR model was conducted to examine how the awareness and present-centered attention (AW) subscale of the I-MP (adjusted to include two attention-focused questions) affects the association between parental history of ACEs and parenting stress. The overall model that included both ACEs and AW as independent variables accounting for

variance in parenting stress, and included study sample and child age and sex as covariates, was statistically significant, $F(6, 274) = 9.442$, $p < 0.001$, and accounted for about 15% of the variance in parenting stress ($R^2 = 0.15$). Total ACEs were positively associated with parenting stress, $B = 1.64$, $SE = 0.47$, $t(274) = 3.53$, $p < 0.001$. AW was negatively associated with parenting stress, $B = -4.56$, $SE = 0.88$, $t(274) = -5.17$, $p < 0.001$. However, the interaction between the two was not significant, $B = 0.45$, $SE = 0.32$, $t(274) = 1.44$, $p = 0.15$, 95% CI[-0.17, 1.08]. All regression assumptions were met.

Exploratory Regression Model 2: Non-judgment Subscale

A second exploratory MMR model was conducted to examine how the non-judgment (NJ) subscale of the I-MP affects the association between parental history of ACEs and parenting stress. Here too, a WLS model was run due to violations of homoscedasticity; all other regression assumptions were met. The overall model that included both ACEs and NJ as independent variables accounting for variance in parenting stress, and included study sample and child age and sex as covariates, was statistically significant, $F(6, 274) = 14.34$, $p < 0.001$, and accounted for about 22% of the variance in parenting stress ($R^2 = 0.22$). Total ACEs were positively associated with parenting stress, $B = 1.97$, $SE = 0.48$, $t(274) = 4.13$, $p < 0.001$. NJ was negatively associated with parenting stress, $B = -4.3$, $SE = 0.63$, $t(274) = -6.8$, $p < 0.001$. However, the interaction between the two was not significant, $B = -0.54$, $SE = 0.28$, $t(274) = -1.94$, $p = 0.05$. This analysis may be underpowered: the 95% CI [-1.08, 0.01] is a little wider and leaning negative, so there is a possibility of a negative effect. Because this was an exploratory post-hoc analysis, an *a priori* power analysis was not completed for this analysis.

Exploratory Regression Model 3: Non-reactivity Subscale

A third exploratory MMR model was conducted to examine how the non-reactivity (NR) subscale of the I-MP affects the association between parental history of ACEs and parenting stress. A WLS model was run due to violations of homoscedasticity; all other regression assumptions were met. The overall model that included both ACEs and NR as independent variables accounting for variance in parenting stress, and included study sample and child age and sex as covariates, was statistically significant, $F(6, 274) = 16.91$, $p < 0.001$, and accounted for about 25% of the variance in parenting stress ($R^2 = 0.25$). Total ACEs were positively associated with parenting stress, $B = 1.95$, $SE = 0.46$, $t(274) = 4.26$, $p < 0.001$. NR was negatively associated with parenting stress, $B = -5.03$, $SE = 0.63$, $t(274) = -8.01$, $p < 0.001$. However, the interaction between the two was not significant, $B = -0.06$, $SE = 0.27$, $t(274) = -0.24$, $p = 0.81$, 95% CI[-0.59, 0.46].

Regression Model 2

An MMR model was conducted to examine how child socioemotional skills affect the association between parental history of ACEs and parenting stress. A WLS model was run due to violations of homoscedasticity; all other regression assumptions were met. The overall model that included both ACEs and child socioemotional skills as independent variables accounting for variance in parenting stress and included study sample and child age and sex as covariates, was statistically significant, $F(6, 274) = 16.17$, $p < 0.001$, and accounted for about 25% of the variance in parenting stress ($R^2 = 0.25$). ACEs were positively associated with parenting stress, $B = 1.54$, $SE = 0.47$, $t(274) = 3.26$, $p = 0.001$. Child socioemotional skills were negatively associated with parenting stress, $B = -0.88$, $SE = 0.11$, $t(274) = -7.71$, $p < 0.001$. However, the two-way interaction between ACEs and child socioemotional skills as independent variables accounting for variance in parenting stress was not significant in this model, $B = -0.07$, $SE =$

0.05, $t(274) = -1.53$, $p = 0.13$, 95% CI [-0.16, 0.02]. The CI for the two-way interaction shows a precise estimate near zero, which suggests no meaningful effect. See Table 5.

Table 5

Moderated Multiple WLS Regression Mode1 2 Main Effects and Interaction: Total Parenting Stress as Outcome

Effect	Unstandardized Estimate	*SE*	95% CI		*p*
			LL	*UL*	
Intercept	77.64**	3.55	70.66	84.62	< 0.001
ACE total	1.54**	0.47	0.61	2.48	< 0.001
DECA TPF	-0.88**	0.11	-1.10	-0.65	< 0.001
Child age	1.01	1.03	-1.02	3.05	0.33
Gender- f	-0.05	2.05	-4.09	3.99	0.98
Sample- PCSR	-6.11**	2.29	-10.62	-1.6	0.008
ACE x DECA	-0.07	-0.07	-0.16	0.02	0.13

Note. $N = 281$. *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; ACE = adverse childhood experiences; DECA = Devereaux Early Childhood Assessment for Preschoolers, Second Edition; TPF = total protective factors; f = female; male used as reference group; PCSR = Parent Child Self-Regulation Study; Emotion Dynamics sample used as reference group; ACE x DECA = ACE total and DECA TPF 2-way interaction.

Discussion

Parenting mindfulness and child socioemotional skills were investigated as moderators of the association between parental ACEs and parenting stress in a sample of caregivers of preschool-aged children. Subscales of the IM-P, the measure used to collect parenting mindfulness (awareness and present-centered attention, non-judgment, and non-reactivity), were also explored as potential moderators of the association between parental ACE history and parenting stress. Although parental ACEs was positively associated with parenting stress, and parenting mindfulness and child socioemotional skills were both negatively associated with parenting stress, the two-way interactions between parental ACEs and parenting mindfulness and

parental ACEs and child socioemotional skills did not account for significantly more additional variance in parenting stress. All three of the I-MP subscales showed negative associations with parenting stress but none of the exploratory two-way interactions using the subscales were significant. Thus, neither of the study hypotheses were supported by the data.

Contributions to the Literature

The positive associations between parental ACE history and parenting stress are consistent with previous research (Lange et al., 2019; Madsen et al., 2022). The negative associations between parenting mindfulness and parenting stress are also consistent with the literature (Fernandes et al., 2021). Finally, the negative associations between child socioemotional skills and parenting stress are also consistent with previous research (Bender & Carlson, 2013). This dissertation adds to a small body of literature on trait-level parenting mindfulness and parenting stress on caregivers of infants (Fernandes et al., 2021) by assessing these constructs in caregivers of preschool-aged children. This is also the first study to examine how ACE history is associated with trait-level parenting mindfulness, as well as the first to test parenting mindfulness and child socioemotional skills as moderators of the association between parental ACE history and parenting stress. In this way, the present, non-significant two-way interaction results are novel and provide a meaningful contribution to the literature.

There are several potential reasons why the study hypotheses were not supported by the data. Due to the lack of information provided by post-hoc power analyses as described in the literature (e.g., Heinsberg & Weeks, 2023; Hoenig & Heisey, 2001), CIs were examined to determine the precision of estimates (e.g., Heinsberg & Weeks, 2023; Hoenig & Heisey, 2001). With the *a priori* power analyses completed before running analyses and narrow CIs near zero for the non-significant main models, it is likely that the current study was sufficiently powered to

detect small, meaningful effects. In other words, while it can be claimed with some confidence that the present results accurately reflected the absence of true, meaningful effects, it is still possible that any true effects were even smaller than the study was powered to detect.

Hypothesis 1

Regardless of levels of parenting mindfulness, higher ACEs were associated with higher parenting stress, and, regardless of number of ACEs, higher parenting mindfulness was associated with reduced parenting stress. In other words, ACEs and parenting mindfulness appear to have independent associations with parenting stress. This may seem surprising due to the intervention effects described in the literature (Cho & Shin, 2025; Lyu & Lu, 2023), but it may be the case that interventions designed to increase parenting mindfulness are required for caregivers with ACE history to experience reduced parenting stress, and baseline mindfulness levels aren't enough to serve as a protective buffer against parenting stress. This theory also aligns with the substantial literature demonstrating that adults with ACE history have lower trait levels of general mindfulness (Beshai & Parmar, 2018; Boughner et al., 2016; Dolbier et al., 2021; Fitzgerald, 2022; Fox et al., 2024; Huang et al., 2021; McKeen et al., 2023). Thus, perhaps general mindfulness, but not mindfulness specific to parenting, serves as a protective effect for individuals with ACEs. Because parents with an ACE history are more likely to have lived in a dysfunctional parenting or caregiving environment when they were growing up compared to those without ACE history (Felitti et al., 1998), parenting-specific mindfulness may be particularly difficult for these individuals. However, it should be noted that the current study did not detect a significant correlation between parental ACE history and level of parenting mindfulness.

Previous parenting mindfulness intervention studies with caregivers with ACE history did not assess long-term effects of the intervention on parenting mindfulness or parenting stress (Cho & Shin, 2025; Lyu & Lu, 2023), so it is possible that only short-term effects of parenting mindfulness interventions exist. Few studies have investigated parenting mindfulness using the IM-P; those that have done so in community samples reported means similar to the present study (e.g., present study mean = 37.59; Coatsworth et al. (2010) mean range = 33.4-36.6; Duncan et al. (2015) mean range = 31.2-43). Thus, the findings from the present sample may generalize to other similar caregivers. The current study highlights that, in community samples who have not explicitly been trained in parenting mindfulness, parenting mindfulness may not serve as a buffer against parenting stress for caregivers with ACE history.

Hypothesis 2

Similar to the results from Hypothesis 1, the data showed that, regardless of levels of child socioemotional skills, higher ACEs were associated with higher parenting stress, and, regardless of number of ACEs, higher child socioemotional skills were associated with reduced parenting stress. In other words, both child socioemotional skills and ACEs also appear to have independent associations with parenting stress. There are few studies that have specifically examined associations between child socioemotional skills and parenting stress, and even fewer that used the DECA-P2. Even though some studies found that child socioemotional skills were more strongly associated with parenting stress than internalizing/externalizing behaviors (Bender & Carlson, 2013), very few studies have compared associations between child socioemotional skills and parenting stress and internalizing/externalizing behaviors and parenting stress. There is also an abundance of research showing consistent, positive associations between child internalizing/externalizing behaviors and parenting stress (e.g., Fang et al., 2024; Kochanova et

al., 2022; Kwon et al., 2022; McDaniel & Radesky, 2020). Therefore, it may be the case that internalizing and/or externalizing behaviors, which may be even more stressful for certain caregivers as they often require a lot of caregiver management, would be more strongly associated with parenting stress of caregivers with ACE history, leading to more stress and increased allostatic load.

Another potential reason that the present study did not detect a moderating effect of child socioemotional skills on the association between ACEs and parenting stress is there may be other child factors, not measured here, that are more important than socioemotional skills in the association between ACEs and parenting stress. For example, child temperament significantly contributes to parenting stress (e.g., Schneebeli et al., 2025). Because of the relatively stable nature of temperament (Bornstein et al., 2018), this child factor may be even more potentially disruptive to parents with high ACEs compared to parenting a child who simply has fewer socioemotional skills, as socioemotional skills can be taught. Lastly, despite the current study's rationale for investigating the absence of child socioemotional skills instead of the presence of challenging behaviors, it may be that the stress of parents with high ACEs is more impacted by a lack of these behaviors than a presence of skills.

Strengths

This study has several strengths in addition to the novel contributions to the field. First, this study used widely-administered, validated, reliable instruments (i.e., ACEs Scale, DECA-P2, PSI-4-SF). Second, this study used a combined sample of two different datasets with similar participants (all caregivers of preschool-aged children), which helped provide a larger sample size and more statistical power. The combined sample also enabled the current study to include multiple methods of participant recruitment (remote versus in-person). The Emotion Dynamics

Study was a completely remote, national study while the PCSR Study was an in-person study conducted in the Pacific Northwest, which provided geographic diversity in the sample.

Limitations and Future Directions

This study also has limitations. First and foremost, and a potential reason for the lack of significant moderating effects of parenting mindfulness and child socioemotional skills detected on the association between parental ACE history and parenting stress, is that all measures in the study were self-report surveys completed by a single reporter: the caregiver. A single reporter with only self-report data may lead to some biases and inaccuracies in the data (e.g., Brenner & DeLamater, 2016), as the caregivers' perceptions of the constructs (ACE history, parenting mindfulness, child socioemotional skills, and parenting stress) may be what is being measured rather than more objective measures. For example, a caregiver with high levels of parenting stress may have a more critical perception of their level of parenting mindfulness and a more negative view of their child's behavior (Barry et al., 2005), rating their parenting mindfulness and child socioemotional skills as lower than the reality compared to parents with lower levels of parenting stress, or vice versa. Future research should utilize multiple methods of assessment of these variables and/or multiple reporters of data. In addition, the ACEs Scale Adult Version (Felitti et al., 1998) relies on caregivers accurately recalling their childhoods, so results may have been different if the current study had prospective reporting of ACEs (Hardt & Rutter, 2004). Future work should conduct prospective, longitudinal studies to increase the reliability of this construct. Social desirability bias is also a potential concern (Paulhus, 1984), as it would lead caregivers to report their parenting mindfulness and child socioemotional skills as higher than they actually are, so future research should use more objective measures to clarify these results.

Another limitation and potential reason for the present null results is that the samples used in these analyses were relatively low-risk with regard to parent stress and ACE history. The general guideline for the ACEs Scale is that four or more ACEs are associated with worse outcomes and are considered high-risk (Felitti et al., 1998); the average number of ACEs in the current sample was 2.41. As such, previous literature focusing on these high ACE samples may not be applicable to the present sample of participants. For example, in the parenting mindfulness intervention studies with caregivers with parental ACE history, participants were recruited specifically for exposure to four or more ACEs in one of the studies (Cho & Shin, 2025). However, the proportion of participants with four or more ACEs in the present sample was only about 28%. Additionally, exposure to four or more ACEs has been associated with the highest risk for forming insecure parent-child relationships (Lange et al., 2019). Thus, results of the analyses run in the present study may differ in samples with a larger proportion of higher risk participants. Future research should utilize samples with more participants with varying levels of ACEs (low, medium, and high) to test the consistency of the present results in this population.

Similarly, participants in this sample reported relatively low parenting stress (M = 79.19) compared to higher-risk samples such as caregivers involved with Child and Family Protection Services (CFPS) (M = 102.87) (Pérez-Padilla et al., 2015) and child welfare (M = 108.5) (Lanier et al., 2012). A study that compared a community sample with a high-risk CFPS sample found that the average PSI score was 79.23 for the community sample (similar to the current sample) and 102.87 for the high-risk CFPS sample (Pérez-Padilla et al., 2015). Therefore, even the caregivers who experienced higher childhood adversity in the present sample may be lower risk due to their community-sample levels of parenting stress. Another limitation is that child sex/gender was measured differently in the Emotion Dynamics and PCSR studies. The variable

was measured and conceptualized as child gender in the Emotion Dynamics study while the variable was measured and conceptualized as child sex in the PCSR study. Although the results didn't change meaningfully (most participants in the Emotion Dynamics study also reported their child's gender as female or male) sex and gender are two different constructs, so it is important to acknowledge that limitation. Third, the scale reliability for some of the I-MP subscales was suboptimal, indicating that the variable may not be assessing these aspects of parenting mindfulness with fidelity; future work should address this limitation with a more robust measure of parenting mindfulness. Lastly, this was a cross-sectional study, which didn't allow for the investigation of how these patterns may change over time.

Conclusions

Despite these limitations, this study provides evidence on the associations between parental ACE history, parenting mindfulness, child socioemotional skills, and parenting stress that supports and extends the current literature by demonstrating that ACE history does not significantly interact with parenting mindfulness or child socioemotional skills in accounting for variance in parenting stress in this sample. This is the first study to examine trait-level associations between parenting mindfulness and ACE history and parenting stress, as well as parenting mindfulness and child socioemotional skills as moderators of the association between parental ACE history and parenting stress.

This study has implications for prevention and intervention. Although the moderator analyses were not significant, this study still showed that higher levels of parenting mindfulness and child socioemotional skills were associated with lower parenting stress in caregivers of preschool-aged children. Thus, it may be that increasing parenting mindfulness (i.e., via parenting mindfulness interventions) and child socioemotional skills (i.e., via parenting programs

and child social-emotional learning programs) may lead to lower parenting stress. This is important because parenting stress is associated with a host of negative consequences such as harsh parenting (Jackson & Choi, 2018), and, in turn, worse child outcomes such as increased internalizing and externalizing behaviors (Kochanova et al., 2022). Future research should utilize multiple reporters or more objective measurements to clarify the results of this study. Prospective, longitudinal studies would also be helpful as retrospective reporting of ACEs tends to be less reliable than prospective reporting (Hardt & Rutter, 2004). Although the sample size was sufficient to detect two-way interaction effects, a larger sample with more caregivers with high levels of childhood adversity and who currently experience elevated parenting stress may detect these effects where this study did not.

CHAPTER III

STUDY 2

Individuals vary in their levels of mindfulness, which may be partly due to individual differences in two key cognitive components of mindfulness: attentional control (AC) and inhibitory control (IC). Mindfulness consists of present-centered awareness, non-judgment toward one's thoughts and the present moment, and non-reactivity toward one's thoughts and the present moment (Chaplin et al., 2018), and the ability to engage in these processes may be supported by certain executive functions. Indeed, greater levels of general mindfulness are associated with higher AC, the cognitive capacity to direct and switch attention to different stimuli (Chin et al., 2021; Moore & Malinowski, 2009; J. J. Walsh et al., 2009; K. M. Walsh et al., 2019), and better IC (Heeren et al., 2009; Moore & Malinowski, 2009; Zhang et al., 2024), the cognitive capacity to stop dominant responses that do not align with an individual's goals (Kang et al., 2022). It would follow that certain executive functions such as AC and IC may be correlated with mindfulness in the context of parenting as well. However, there are no known studies investigating associations between AC, IC, and parenting mindfulness to date.

Monitor and Acceptance Theory (MAT)

The role of parenting mindfulness in shaping parenting stress responses can be understood using the Monitor and Acceptance Theory (MAT; Lindsay & Creswell, 2017). The MAT posits that the mechanisms of general mindfulness interventions in reducing stress, negative affect, and stress-related health outcomes include improved attention monitoring and acceptance of one's experience. Attention monitoring is associated with improved cognitive outcomes, but acceptance is also necessary to reduce reactivity to what one is paying attention to for improvement in stress-related outcomes (Lindsay & Creswell, 2017). There are many studies

that have compared monitoring and acceptance to determine if monitoring alone would be associated with better outcomes related to stress (Chin et al., 2019; Lindsay et al., 2017), affect (Lindsay et al., 2018), and stress-related health outcomes (Lindsay et al., 2017), or if acceptance was necessary to improve outcomes. All three of these studies found that including acceptance as a component of mindfulness training was associated with better outcomes compared to only training monitoring skills (Chin et al., 2019; Lindsay et al., 2017, 2018). However, only one study has tested monitoring skills training as a mechanism underlying the effect of mindfulness interventions on improved AC, showing that indeed, monitoring skills training drove the mindfulness intervention-related improvements in AC (Chin et al., 2021).

Parenting mindfulness likely requires present-centered attention toward the child to observe their needs, emotions, and behaviors (AC), but it also likely requires an open, accepting, non-judgmental disposition with their child as well as non-reactivity to challenging child behaviors (IC) (Fernandes et al., 2021). While no studies have specifically compared AC and IC among caregivers to determine which of these facets of self-control accounts for more variance in parenting mindfulness, several related studies provide clues. First, monitoring skills have been shown to drive the effects of mindfulness training on AC (Chin et al., 2021). Second, a large body of literature has demonstrated the importance of acceptance in mindfulness interventions for improving stress-related outcomes (e.g., Chin et al., 2019; Lindsay et al., 2017, 2018). Acceptance is highly related to nonjudgment and nonreactivity (Lindsay & Creswell, 2017), which likely rely on IC. The research showing that the component of acceptance is always necessary for improved stress-related outcomes (rather than monitoring alone) in mindfulness interventions (Chin et al., 2019; Lindsay et al., 2017, 2018) may mean that IC is also more

strongly associated with parenting mindfulness than AC. Thus, variation in how much parents use mindfulness may depend on individual differences in these specific cognitive abilities.

Attentional Control

AC is the cognitive capacity to direct attention to stimuli and switch attention to different stimuli, stay focused on a stimulus or task, and ignore irrelevant stimuli (depending on the individual's goals) (Chin et al., 2021; J. J. Walsh et al., 2009; K. M. Walsh et al., 2019). AC is thought to underlie many cognitive abilities including working memory capacity, fluid intelligence, and sensory discrimination (Burgoyne & Engle, 2020). Anxiety is associated with poorer AC (Eysenck et al., 2007), and greater AC is associated with better emotion regulation (O'Bryan et al., 2017). While AC is measured in many different ways in the literature, a common tool is the Eriksen Flanker Task (Eriksen & Eriksen, 1974). The Eriksen Flanker Task (Eriksen & Eriksen, 1974) is an experimental task that has participants attend to a central target stimulus that is "flanked" by distracting stimuli and press a button that corresponds to the direction that the stimulus is facing (Wylie et al., 2009). There are two conditions: a congruent condition and an incongruent condition. The congruent condition shows all stimuli as facing the same direction, including the distracting stimuli (i.e., >>>>>) and tends to result in greater accuracy and faster reaction times (Wylie et al., 2009). The incongruent condition shows the distracting stimuli as facing the opposite direction from the central target stimulus (i.e., <<><<) and tends to result in lower accuracy scores and slower reaction times (Wylie et al., 2009). Greater AC is assessed by participants' accuracy on the task, meaning when participants successfully pressed the correct button that matched the target stimulus in both conditions. The Attention Network Test (ANT) is another experimental measure of AC that assesses alerting, orienting, and conflict monitoring (Fan et al., 2002). The ANT is conceptually similar to the Flanker Task (Fan et al.,

2002; K. M. Walsh et al., 2019), but differs in that it adds a cueing component. Finally, there are self-report measures of AC, such as the Attentional Control Scale (ACS; Derryberry & Reed, 2002).

Mindfulness and Attentional Control

The skills captured in the construct of AC, the cognitive capacity to direct attention to stimuli and switch attention to different stimuli, stay focused on a stimulus or task, and ignore irrelevant stimuli (Chin et al., 2021; J. J. Walsh et al., 2009; K. M. Walsh et al., 2019), are central to general mindfulness, which emphasizes a present-centered awareness and bringing oneself back to the present moment in a non-judgmental way when distractions arise. Higher levels of general mindfulness have been found to correlate with higher levels of trait AC (J. J. Walsh et al., 2009) and improved scores on cognitive tests of AC (Moore & Malinowski, 2009). Completion of general mindfulness training is also associated with greater AC on cognitive tests compared to individuals completing cognitive training (K. M. Walsh et al., 2019) or no intervention (Chin et al., 2021). However, it remains unknown whether these effects translate to trait mindfulness in the context of parenting; there are no known studies that have investigated the association between AC and parenting mindfulness to date. Lastly, there are no known studies utilizing the Flanker Task to assess AC and any sort of mindfulness.

Inhibitory Control

IC, the cognitive capacity to stop dominant responses that do not align with an individual's goals, can also be thought of as impulse control (Kang et al., 2022), and is considered to be one of the core components of executive function (Fiske & Holmboe, 2019). IC is important for voluntary behaviors, especially aligning with one's goals and inhibiting prepotent responses (Kang et al., 2022). IC is composed of both motor inhibition and

interference inhibition (Kang et al., 2022). Motor inhibition refers to the capacity to inhibit a prepotent motor response, while interference inhibition refers to the ability to attend to a target stimulus and ignore distracting stimuli (Kang et al., 2022). Individuals with attention deficit hyperactivity disorder (ADHD) and/or impulsive behaviors also tend to have lower IC (Malloy-Diniz et al., 2007; Roberts et al., 2011), which is important for parenting, particularly with children with more challenging behaviors. Better IC is also associated with increased sensitive and responsive parenting behaviors (Shaffer & Obradović, 2017).

IC is measured using experimental tasks like the Go/NoGo Task (Nosek & Banaji, 2001) and the Stop-Signal Task (SST; Logan & Cowan, 1984), which both assess motor inhibition. In the Go/NoGo Task, participants must press a button when they see "Go" stimuli and withhold a response when they see "NoGo" stimuli, with most trials consisting of "Go" stimuli in order to build up a tendency to respond (Berkman et al., 2009). IC is assessed by the accuracy on the Go/NoGo Task: the percent correct (pressing the button when "Go" stimuli was presented and withholding a response when "NoGo" stimuli was presented). The SST is similar to the Go/NoGo Task in that participants must respond to "Go" stimuli as quickly as possible and then withhold responses when they see a "stop" stimulus (Logan & Cowan, 1984); IC is assessed by participants' reaction time.

Mindfulness and Inhibitory Control

IC supports the present-centered awareness, non-judgment, and non-reactivity that mindfulness emphasizes. Higher levels of general mindfulness are associated with improved performance on tests measuring IC (Moore & Malinowski, 2009). Engagement in general mindfulness interventions compared to no intervention is also associated with improved performance on tests measuring IC (Heeren et al., 2009). Thus, it follows that caregivers with

higher trait levels of parenting mindfulness would also have better IC compared to caregivers with lower levels of parenting mindfulness. However, only one study has examined the association between caregivers' level of any kind of mindfulness and IC (Zhang et al., 2024). This study measured general mindfulness, and found that caregivers who had higher levels of nonreactivity showed better IC in cognitive tasks compared to caregivers with lower levels of nonreactivity. Again, it remains unknown whether these effects translate to mindfulness in the context of parenting; there are no known studies that have examined IC and parenting-specific mindfulness to date.

Current Study

The objective of the current study is to examine how AC and IC are associated with parenting mindfulness. To achieve this goal, a secondary data analysis was conducted on the Parent Child Self-Regulation (PCSR) Study (Giuliani et al., 2021). This study will help us understand which facets of self-control (AC, IC) are most important for engaging in mindfulness in the context of parenting, and thus identify targets for parenting mindfulness interventions.

Research Question and Hypothesis

RQ: a) Are AC or IC associated with parenting mindfulness, and b) if so, which facet will be more strongly associated with parenting mindfulness?

H: a) Both AC and IC will be positively associated with parenting mindfulness, though b) IC will be more strongly associated with parenting mindfulness compared to AC.

Method

This study addresses the research question and hypothesis using data from one existing data set. These participants provided self-report and behavioral data across two laboratory sessions.

Sample

The sample for this study consists only of participants from the PCSR dataset (n = 91), as the Emotion Dynamics dataset does not have variables assessing AC or IC. An *a priori* power analysis using G*Power 3.1 indicated that a total sample of N = 86 was required to detect a medium effect size (f^2 = .16) at 80% power with an alpha of 0.05 and 5 predictors.

Procedure

The PCSR protocol consisted of two separate experimental sessions spaced roughly one week apart. Surveys that mothers completed in Session One were included (i.e., demographics, IM-P), and the behavioral data from the tasks that mothers completed in an MRI to assess self-regulation, AC, and IC were from Session Two.

Measures

Attentional Control

To measure AC, researchers administered the Flanker Task (Fan et al., 2002) using the E-Prime software (Psychology Software Tools, Inc., Sharpsburg, PA) while mothers were in the MRI machine. The Flanker Task (Fan et al., 2002) consisted of the following procedures: mothers were presented with a computer screen that showed five arrows (< or >) in a horizontal line at a time (for each trial) and they were instructed to focus on the middle arrow and press a button (left or right) that corresponded to the direction that the middle arrow was pointing as quickly as they could; in the congruent trials, participants were only shown arrows that point in the same direction (<<<<<, >>>>>), which tends to be associated with greater accuracy and faster reaction time than in the incongruent trials, in which participants were shown arrows surrounding the middle focus arrow that were pointing in the opposite direction of the middle arrow (<<><<, >><>>). In other words, participants must attend to just the middle arrow and

ignore the other arrows. Half of the trials were congruent trials and half were incongruent trials. The arrows were presented in random order. All of the arrows were displayed for 200 ms, then there was an intertrial interval randomly varying from 700 to 1,100 ms that either came right after the participant's response or 800 ms after the stimulus was first presented, depending on which came first. Participants' level of AC was measured by calculating their accuracy, subtracting the accuracy (number of correct trials divided by the total number of trials with any response) in the congruent trials from the accuracy in the incongruent trials. Higher accuracy numbers represent better AC.

Inhibitory Control

To measure IC, researchers administered the Go/NoGo Task (Berkman et al., 2009) while mothers were in the MRI machine. The Go/NoGo Task (Berkman et al., 2009) consists of the following procedures: mothers were presented with a computer screen that showed blocks of stimuli including cups and animals. Participants were instructed to press a button when they saw cups (Go [G] trials, 80% of stimuli) but withhold a response when they saw animals (NoGo [NG] trials, 20% of stimuli) for half of the blocks. The stimuli were then reversed for the other half of the blocks such that animals became G stimuli and cups became NG stimuli. There were 10 blocks total for each participant. Each block started out with an instruction screen that lasted five seconds and then 50 stimuli were shown for one second each, with a fixation-cross baseline ISI that lasted from 167-500 ms (M = 333 ms) following each stimulus. Most trials in a Go/NoGo task consist of "go" stimuli in order to build up that tendency to respond. Participants' IC was measured by their accuracy on the Go/NoGo Task (percent correct pressing the button for the G stimulus and withholding a response for the NG stimulus).

Interpersonal Mindfulness in Parenting Scale (I-MP)

The Interpersonal Mindfulness in Parenting Scale (I-MP) (Duncan, 2007) total parenting mindfulness score was used as the dependent variable. All three of the IM-P subscales (awareness and present-centered attention, non-judgment, and non-reactivity) were also explored as separate dependent variables. Total IM-P scores showed acceptable internal consistency in the sample ($\alpha = 0.674$). The four-item awareness and present-centered attention subscale showed unacceptable internal consistency in the sample ($\alpha = 0.272$). However, using only the two items that asked parents about their attention to create a present-centered attention subscale resulted in acceptable internal consistency ($\alpha = 0.65$). The non-judgment subscale showed poor internal consistency ($\alpha = 0.503$), and the non-reactivity subscale showed acceptable internal consistency ($\alpha = 0.620$) in the sample.

Covariates

Caregiver age, income, and education were included as covariates, as these variables have been associated with parenting mindfulness (Fernandes et al., 2021; Zhang et al., 2024).

Statistical Analysis Plan

The hypothesis was tested via a multiple linear regression analysis with two independent variables and one dependent variable in the model. The two independent variables were AC (i.e., accuracy scores from the Flanker task), and IC (i.e., accuracy scores from the Go/No-Go Task). The dependent variable was total parenting mindfulness scores from the IM-P. The subscales of the I-MP were also explored as dependent variables, controlling for multiple comparisons using the Benjamini-Hochberg method (Benjamini & Hochberg, 1995). Because the awareness and present-centered attention subscale reliability was so low, the present-centered attention variable was recreated for exploratory analyses outside of multiple imputation. All variables that were included in these analyses are continuous variables. The regression assumptions of normality of

residuals (inspected via Q-Q plot), homoscedasticity (inspected via residual vs fitted plot and Breusch-Pagan test $p > 0.05$), no multicollinearity (variance inflation factor [VIF] < 5), and influence (Cook's D) were tested for all models. Results of regression assumption tests and associated corrections are included in the results by model. This analysis was run using RStudio version 2025.9.1.401 for Mac (Posit Team, 2025).

Results

Demographics

Caregivers' ages ranged from 20 to 43 ($M = 33.07$, $SD = 5.14$ $n = 88$). Caregivers' income ranged from $0 to $260,000 ($M = 69,329.12$, $SD = 48,754.38$, $n = 86$). All caregivers were female (100%). See Table 6 for full PCSR demographics.

Correlations

Spearman correlations were run on primary variables which included all variables in the multiple imputation and analytical model: Flanker task accuracy, Go/NoGo task accuracy, parenting mindfulness subscales (awareness and present-centered attention, non-judgment, non-reactivity), total parenting mindfulness, caregiver age, income, and education to account for high skew and kurtosis (de Winter et al., 2016). The Benjamini-Hochberg method was used to correct for multiple comparisons (Benjamini & Hochberg, 1995). See Table 7 for correlation results and descriptive statistics.

Table 6

PCSR Caregiver Demographics

Variable	*M(SD); n(%)*
Age	33.07 (5.14)
Income	69,329.12 (48,754.38)
Years of edu	15.15 (2.47)
Sex	
Female	91 (100%)
Male	0 (0%)
Ethnicity	
Hispanic	0 (0%)
Non-Hispanic	88 (96.7%)
Race	
White	78 (85.7%)
Black	0 (0%)
Asian	1 (1.1%)
Latinx/Hispanic	1 (1.1%)
Mixed	6 (6.6%)

Note. Values are *M* (*SD*) for continuous variables and *n* (%) for categorical variables. *N* = 91; PCSR = Parent Child Self-Regulation Study; edu = education.

Table 7

Spearman Correlations and Descriptive Statistics for Key Variables

Variable	M	SD	Income	Age	Edu	AC	IC	I-MP
Income (US$)	69,329.12	48,754.38	—					
Age	33.07	5.14	0.34**†	—				
Edu	15.15	2.47	0.58***†	0.47***†	—			
AC	-0.10	0.09	-0.00	0.23*	0.21	—		
IC	0.95	0.06	0.23*	0.14	0.32**†	0.14	—	
I-MP	37.59	3.63	0.00	0.03	0.13	-0.09	0.19	—

Note. edu = caregiver education (years); AC = attentional control as measured by Flanker task accuracy; IC = inhibitory control as measured by Go/NoGo task accuracy; I-MP = Interpersonal Mindfulness in Parenting Scale total score; M = mean; SD = standard deviation. Ns for correlations ranged from 77-88 due to pairwise deletion. Values are Spearman's ρ. * p < .05, ** p < .01, *** p < .001. † indicates correlations remain significant after Benjamini-Hochberg (BH) correction.

Missing Data

Missingness across the two IVs was moderate (~15%). In the multiple regression model with AC and IC as independent variables and I-MP as the dependent variable, about 18% of the sample would be lost ($N = 91$ to $N = 74$). The data were lost due to MRI crashes, which is considered to be missing completely at random (MCAR). So, multiple imputation (MI) was run using the mice package in R (van Buuren & Groothuis-Oudshoorn, 2011) to account for this missing data as well as missing data in the covariates and outcomes since MI was being run for the IVs. The outcome and covariates variables had fewer missing data than the IVs (all less than 10%). A total of 20 imputation iterations were run as is recommended (Austin et al., 2021). The entire MI model contained all analysis variables. The entire MI model included: Flanker task accuracy, Go/NoGo task accuracy, parenting mindfulness subscales (awareness and present-centered attention, non-judgment, non-reactivity), caregiver age, income, and education.

Predictive mean matching was used to impute all variables. Regression estimates were pooled using Rubin's rules (Austin et al., 2021). Diagnostic checks were run including trace plots, which showed good model convergence, and density plots, which showed that the distribution of the imputed values and observed values were consistent.

Regression Model 1: Total IM-P

A multiple linear regression model was run to examine the associations between AC and IC with total parenting mindfulness. AC and IC were included in the same model, along with planned covariates including caregiver age, income, and education. Neither AC (B = -6.56, SE = 4.31, t(76.93) = -1.52, p = 0.13, 95% CI [-15.14, 2.02]) nor IC (B = 9.89, SE = 7.08, t(78.99) = 1.4, p = 0.17, 95% CI [-4.19, 23.98]) was significantly associated with total parenting mindfulness. The overall model accounted for about 15% of the variance in total parenting mindfulness (R^2 = 0.15). See Table 8. Regression assumptions were tested and met. Influence diagnostics indicated no cases that significantly changed results in the model.

Table 8

Regression Model 1: Total I-MP as Outcome

Effect	Unstandardized Estimate	*SE*	95% CI		*p*
			LL	*UL*	
Intercept	20.62**	7.29	6.12	35.13	0.006
IC	9.89	7.08	-4.19	23.98	0.17
AC	-6.56	4.31	-1.51	2.02	0.13
CG age	0.04	0.09	-1.34	0.22	0.64
Income (US$)	-0.002**	0.00009	-0.0004	-0.00001	0.003
CG Years of edu	0.49*	0.2	0.09	0.88	0.02

Note. $N = 91$. *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; IC = inhibitory control as measured by Go/NoGo task accuracy; AC = attentional control as measured by Flanker task accuracy; CG = caregiver; edu = education.

Exploratory Regression Model 1: Awareness and Present-Centered Attention Subscale

A multiple linear regression model was run to examine the associations between AC and IC with the awareness and present-centered attention subscale of the IM-P new variable. The model included the same covariates as the total parenting mindfulness model (caregiver age, income, and education). AC was not significantly associated with the awareness and present-centered attention subscale ($B = -2.26$, $SE = 1.59$, $t(69) = -1.41$, $p = 0.16$, 95% CI [-5.43, 0.91]), nor was IC ($B = 4.15$, $SE = 2.56$, $t(69) = 1.62$, $p = 0.11$, 95% CI [-0.96, 9.25]). The overall model accounted for about 2% of the variance in the awareness and present-centered attention subscale ($R^2 = 0.02$). Regression assumptions were tested and met. Influence diagnostics indicated no cases that significantly changed results in the model.

Exploratory Regression Model 2: Non-judgment Subscale

A multiple linear regression model was run to examine the associations between AC and IC with the non-judgment subscale of the IM-P. The model included the same covariates as the total parenting mindfulness model (caregiver age, income, and education). Neither AC (B = -1.83, SE = 2.11, t(68.58) = -0.87, p = 0.39, 95% CI [-6.05, 2.37]) nor IC (B = 0.92, SE = 3.34, t(79.45) = 0.28, p = 0.78, 95% CI [-5.72, 7.57]) was significantly associated with the non-judgment subscale. The overall model accounted for about 6% of the variance in the non-judgment subscale (R^2 = 0.06). Regression assumptions were tested and met. Influence diagnostics indicated no cases that significantly changed results in the model.

Exploratory Regression Model 3: Non-reactivity Subscale

A multiple linear regression model was run to examine the associations between AC and IC with the non-reactivity subscale of the IM-P. The model included the same covariates as the total parenting mindfulness model (caregiver age, income, and education). AC was not significantly associated with the non-reactivity subscale (B = -3.25, SE = 1.75, t(79.53) = -1.86, p = 0.07, 95% CI [-6.73, 0.24]). IC was also not significantly associated with the non-reactivity subscale (B = 1.47, SE = 2.91, t(79.14) = 0.51, p = 0.61, 95% CI [-4.32, 7.26]). The overall model accounted for about 18% of the variance in the non-reactivity subscale (R^2 = 0.18). Regression assumptions were tested and met. Influence diagnostics indicated no cases that significantly changed results in the model.

Discussion

Associations between AC (as measured by accuracy on the Flanker Task) and IC (as measured by accuracy on the Go/NoGo Task) with caregiver-reported parenting mindfulness were investigated in the current study. Exploratory analyses were also run to examine the associations between AC, IC, and the subscales of the I-MP (awareness and present-centered

attention, non-judgment, and non-reactivity). Neither AC nor IC was significantly associated with total parenting mindfulness, which did not provide support for the study hypothesis. AC and IC were also not significantly associated with any of the I-MP subscales (i.e., awareness and present-centered attention, non-judgment, non-reactivity).

There are several potential reasons why the data did not support the hypothesis that both AC and IC would be significantly associated with parenting mindfulness. First, the study may not have been appropriately powered to detect an effect. Due to the lack of information provided by post-hoc power analyses as described in the literature (e.g., Heinsberg & Weeks, 2023; Hoenig & Heisey, 2001), CIs were examined to determine the precision of estimates (e.g., Heinsberg & Weeks, 2023; Hoenig & Heisey, 2001). Although an *a priori* power analysis completed before running analyses showed that the study was sufficiently powered to detect a medium effect, the true effects may have been smaller than the study was powered to detect. The CIs for all of the non-significant main models also showed a wide interval. This could mean that the estimates were not precise and there may be a low power issue. So, perhaps with a larger sample, any true effects would be detected.

Second, there are also no currently known studies utilizing the Flanker Task to assess AC in relation to mindfulness in any context. The studies that have utilized experimental tasks to assess AC in relation to mindfulness have mostly used the ANT (Tang et al., 2007) or a revised version of it (K. M. Walsh et al., 2019; Sørensen et al., 2018). The ANT assesses three independent attention functions: alerting, orienting, and conflict monitoring (Fan et al., 2002). The ANT includes cues (alerting, orienting) whereas the Flanker Task usually does not; as such, the ANT may be a more comprehensive assessment of AC than the Flanker Task.

All existing studies on AC and mindfulness (K. M. Walsh et al., 2019; Sørensen et al., 2018; Tang et al., 2007) used measures of general mindfulness, and found that it was associated with improved conflict monitoring but not alerting or orienting attention functions (except for Sørensen et al. (2018) who only found significant results for the effects of orienting cues on conflict monitoring). So, the present non-significant association between conflict monitoring– as measured by the Flanker Task – and parenting mindfulness does not fit with the existing literature on AC and general mindfulness. However, all of the studies in this literature that employed an experimental measure of AC used variations of the ANT, which may contribute to this inconsistency. In addition, most of these studies tested the effects of general mindfulness interventions (K. M. Walsh et al., 2019; Tang et al., 2007), so it may be that mindfulness interventions are more effective for improvements in AC rather than baseline, or trait levels of mindfulness. Of course, it may be the case that AC is not actually associated with parenting mindfulness and is only associated with general mindfulness.

Similarly, it may also be the case that IC is not associated with total parenting mindfulness, as this is the first study to examine that association. The one previous study that examined IC and general mindfulness in parents (Zhang et al., 2024) utilized the Go/NoGo Task to measure IC as well, but they examined caregivers' mindfulness using the Five Factor Mindfulness Questionnaire (FFMQ; Baer et al., 2006), which does not assess mindfulness in the context of parenting. Therefore, it may be that general mindfulness, but not parenting mindfulness, is associated with IC, or the discrepancy may be more of a product of the scales themselves. A qualitative comparison of the two scales indicates that the FFMQ non-judgment subscale, for example, assesses how judgmental the individual is of themselves, whereas the IM-P non-judgment subscale asks parents how open they are to their child's ideas and feelings.

Another possibility for the inconsistency between our findings and the previous work on IC and mindfulness is that our low-risk sample of caregivers may not use motor inhibition (as measured by the Go/NoGo task) in their parenting as much as parents in higher-risk samples may need to (e.g., resisting harsh responses to challenging child behavior) (Lanier et al., 2012). Again, it also may be that improvements in mindfulness via training are associated with IC (Heeran et al., 2009), and that trait, or baseline levels of parenting mindfulness are not significantly associated with IC.

Contributions to the Literature

This is the first study to examine the associations between AC, IC, and parenting mindfulness. This study also showed that, among a community sample of caregivers, neither AC nor IC was associated with total parenting mindfulness as measured by the IM-P, nor its awareness and present-centered attention, non-judgment, and non-reactivity subscales. This study provides a novel contribution to the field as this is the first study to examine and compare AC, IC, and parenting mindfulness in any sample.

Strengths and Limitations

This study has several strengths. First, valid, experimental task-based measurements of AC and IC were used, which increases the validity of the findings, and adds to the growing literature on experimental measures of AC, IC, and mindfulness. This is also the first study to use the Flanker Task to assess AC in relation to mindfulness in any context, which adds novel contributions to the literature and suggests that the AC that is associated with mindfulness is best captured using the ANT. The use of both caregiver self-report measures and experimental task-based measures also provides some variability in the sources of data in contrast to only utilizing

one type of data source, decreasing bias. Utilizing MI to account for missing data is another strength, particularly since the missing data in the independent variables were MCAR.

This study also has limitations. Similar to the previous study, parenting mindfulness was only measured via a single reporter (the caregiver), which may introduce some bias (e.g., Brenner & DeLamater, 2016). Future studies would benefit from additional reporters and/or measures of mindfulness. The study was cross-sectional, so no longitudinal claims can be made. While mindfulness was not the focus of the study from which these data came, future studies should replicate this result with psychometrically-robust measures and appropriately-powered samples. Additionally, the present sample was quite homogeneous: participants were all biological mothers of preschool-aged children living in the Pacific Northwest, and so these results might not generalize to other caregivers.

Conclusions

This study showed that AC and IC may not be significantly associated with caregivers' level of parenting mindfulness. Instead, there may be other cognitive contributors to parenting mindfulness that were not measured here, which should be explored in future research. These results are in contrast to MAT (Lindsay & Creswell, 2017), which posits that monitoring and acceptance are important for mindfulness. However, AC as measured by the Flanker Task and IC as measured by the Go/NoGo Task may not be the correct operationalization for the constructs of attention monitoring and acceptance, respectively, in MAT (Lindsay & Creswell, 2017). The MAT also specifically examines effects of mindfulness interventions, so the results may differ for samples explicitly trained in mindfulness (Lindsay & Creswell, 2017). Further, the MAT was created for general mindfulness, and may not apply as directly to mindfulness in the context of parenting. Using different measures for AC, IC, and parenting mindfulness would help clarify

results to determine if the present study's null results were due to measurement issues. Future research should also utilize more heterogeneous samples to clarify the results.

CHAPTER IV

OVERALL DISCUSSION

This dissertation examined caregiver- and child-level factors that may affect the association between parental ACE history and parenting stress, and which aspects of parental cognition are associated with levels of parenting mindfulness, among a sample of caregivers of preschool-aged children. Specifically, caregivers' level of parenting mindfulness and child socioemotional skills were examined as moderators of the association between parental ACE history and parenting stress. Associations between AC, IC, and parenting mindfulness were also examined, including whether either aspect of cognition had a stronger association with parenting mindfulness than the other. Overall, results showed that neither parenting mindfulness nor child socioemotional skills moderated the association between parental ACE history and parenting stress. Neither AC nor IC was associated with total parenting mindfulness or any of the three subscales.

Child Socioemotional Skills

Child socioemotional skills were negatively associated with parenting stress, as expected. However, the two-way interaction between parental ACE history and child socioemotional skills did not account for a significant amount of variance in parenting stress. This suggests that child socioemotional skills and parental ACE history are independently associated with parenting stress, which may mean that the association between parental ACE history and parenting stress does not depend on child socioemotional skills, or perhaps the two constructs do interact to account for parenting stress, but the present study was not able to detect the effect. For example, these results may have been different in a higher-risk sample with more extreme challenging child behaviors (e.g., externalizing behaviors), as these behaviors are consistently linked with

parenting stress in the literature (Fang et al., 2024; Kochanova et al., 2022; Kwon et al., 2022; McDaniel & Radesky, 2020). Such behaviors may be even more stressful for caregivers with ACE history, as they are more disruptive and require more caregiver management (Lange et al., 2019).

Parenting Mindfulness

Although the main effects (ACEs and parenting stress; parenting mindfulness and parenting stress) were significant and in the direction expected (positive; negative), the two-way interaction between parental ACE history and parenting mindfulness did not account for a significant amount of variance in parenting stress. These findings indicate that either the association between parental ACE history and parenting stress does not depend on level of parenting mindfulness, or that the interaction of ACE history and mindfulness on parenting stress exists but was not detected in this sample. The discrepancy between the literature suggesting the presence of this interaction and the current study's results may be due to measurement. There are many different ways to assess mindfulness, the most common of which is the FFMQ, which asks individuals to report on their use of mindfulness in life more generally (e.g., "I notice the smells and aromas of things"). The IM-P, on the other hand, asks parents to report on how they attend, listen, and react to their children. The FFMQ has items such as, "I watch my feelings without getting carried away by them," which captures emotion regulation, while the I-MP focuses more on caregivers' awareness of their feelings in relation to their child, such as, "I am aware of how my moods affect my child." ACE history is associated with poor emotion regulation (e.g., Caldwell & Shaver, 2015), and mindfulness interventions have been shown to improve emotion regulation in individuals with ACE history (e.g., Caldwell & Shaver, 2015), so this may be more important for parenting stress compared to awareness of how moods affect the child, for

example. It may also be the case that an intervention is required in order for parenting mindfulness to become salient enough to then reduce parenting stress in caregivers with ACE history (Cho & Shin, 2025; Lyu & Lu, 2023), and trait, or baseline levels of parenting mindfulness are not enough to serve as a protective effect.

Neither AC nor IC was significantly associated with total parenting mindfulness, inconsistent with the study hypothesis. One interpretation of this finding is that neither AC nor IC is an aspect of parental cognition that accounts for variance in overall parenting mindfulness. This interpretation may reflect that other aspects of parental cognition not measured here covary with overall parenting mindfulness, and that AC and IC are only associated with general individual-level mindfulness. For example, parenting mindfulness may be more strongly associated with set-shifting than AC or IC. Future studies should employ a more comprehensive battery of cognition measures to test this theory. Alternately, as mentioned in the Study 2 discussion, the true effects may have been smaller than the medium effect size that the study was powered to detect. Another possibility is that AC and IC are only associated with mindfulness in the context of interventions rather than trait-level mindfulness. This was also the first study to use the Flanker Task to assess AC in relation to mindfulness in any context, so results may differ for other tasks like the ANT.

Components of Mindfulness

The exploratory analyses examining the I-MP subscales as moderators in the association between parental ACE history and parenting stress were not significant. These findings may indicate that the association between parental ACE history and parenting stress does not depend on the constructs measured by the subscales of the I-MP. Another interpretation is that perhaps the moderation was not detected in this sample. All three of the subscales (awareness and

present-centered attention, non-judgment, and non-reactivity) were negatively associated with parenting stress, indicating that these facets of mindfulness are linked to lower levels of parenting stress. Similar to overall parenting mindfulness, mindfulness interventions (that increase all three of these facets of parenting mindfulness) may be required to reduce parenting stress among caregivers with ACE history (Cho & Shin, 2025; Lyu & Lu, 2023), rather than just baseline, or trait levels of parenting mindfulness. The current study highlights that, in community samples who have not explicitly been trained in parenting mindfulness, the individual facets of parenting mindfulness (awareness and present-centered attention, non-judgment, and non-reactivity) may not serve as a buffer against parenting stress for caregivers with ACE history.

Neither AC nor IC was associated with any of the I-MP subscales (awareness and present-centered attention, non-judgment, and non-reactivity), which could be interpreted to indicate that neither AC nor IC is an aspect of parental self-control that accounts for variance in the attention, non-judgment, or non-reactivity components of parental mindfulness. That interpretation would suggest that other aspects of parental cognition not measured here (e.g., set-shifting) might be associated with these aspects of parenting mindfulness. Indeed, a previous study investigating general mindfulness (via the FFMQ) and IC (via the Go/NoGo task) also did not find significant associations between concurrent measures of the two constructs (Zhang et al., 2024). In that study, though, the mindfulness subscales of observing and nonreactivity interacted with each other to account for parental IC one year later, such that fathers' observing was associated with decreased IC when they reported low nonreactivity, whereas mothers' observing was associated with increased IC. Therefore, it may be that longitudinal data are necessary to detect the effects of parenting mindfulness on IC. Interestingly, the percent variance explained by the independent variables in the model using the non-reactivity subscale was considerably

higher (18%) than that explained by the models using the other two subscales (2-6%). This suggests that AC and IC together may be more strongly associated with the non-reactivity aspect of parenting mindfulness, which should be investigated in future work.

It is also important to note that the scale reliability for the validated version of the awareness and present-centered attention subscale was unacceptable in the present sample; the modified variable that was used in the present analyses only included two of the four original items, both of which asked parents to report on how much attention they paid to their child. This scale ultimately did not assess the topic of the other two items in the original subscale, how the parent and child's moods affect each other. Therefore, it may still be that a more accurate scale assessing awareness and present-centered attention would produce different results.

Contributions to the Literature

The associations between parental ACE history, parenting mindfulness, and child socioemotional skills with parenting stress were consistent with previous literature showing that ACE history is positively associated with parenting stress (e.g., Lange et al., 2019; Madsen et al., 2022) while parenting mindfulness (Fernandes et al., 2021) and child socioemotional skills (Bender & Carlson, 2013) are negatively associated with parenting stress. The two-way interactions and examining the degree to which experimental measures of AC and IC account for variance in parenting mindfulness are novel contributions. The lack of significant results for the associations between AC, IC, and parenting mindfulness are somewhat inconsistent with the literature showing that AC (Chin et al., 2021; Moore & Malinowski, 2009; J. J. Walsh et al., 2009; K. M. Walsh et al., 2019) and IC (Moore & Malinowski, 2009; Zhang et al., 2024) are associated with higher levels of general mindfulness. The present results suggest that AC and IC may not be as important for overall mindfulness in the context of parenting, or that the IM-P

scale does not capture the aspects of parenting mindfulness that are associated with these components of executive function.

Limitations and Future Directions

A limitation of this dissertation is that most of the analyzed variables were just from a single reporter, the caregiver. Due to only including a single reporter, the study may have been measuring caregivers' perceptions of these variables (i.e., ACEs, parenting stress, parenting mindfulness, child socioemotional skills) rather than the variables themselves. Some of these factors may influence one another as well, for example, caregivers with higher perceived parenting stress may also perceive their child's behaviors as more difficult (thus leading to them reporting lower child socioemotional skills) (Bender & Carlson, 2013). Future research should utilize multiple reporters and/or more objective measurements of these variables to clarify these results. Utilizing larger samples would also be helpful for clarifying the results as there was a notable amount of missing data in the AC and IC variables in the Study 2 sample. Another limitation is that both of these studies were cross-sectional; longitudinal designs would also help clarify the trajectory of the association between ACEs and later perceived parenting stress, and perhaps identify how child and parent factors like the ones investigated in this dissertation affect that time course. Utilizing different measures for AC (such as the ANT) in future research would also help clarify if this aspect of cognition is actually associated with parenting mindfulness or if the effects are just specific to general mindfulness.

Many of the present null findings may be because our samples were low-risk, community samples. Future research should examine higher-risk samples (higher number of parental ACEs and greater parenting stress) to determine if caregivers' levels of parenting mindfulness or child socioemotional skills act as protective factors against parenting stress among caregivers with

cumulative stress, and thus, likely more allostatic load (Lange et al., 2019). Future research could also examine how the intensity and/or duration of childhood adversity affects the underlying associations of parental ACE history with parenting stress and mindfulness. The Dimensional Model of Adversity and Psychopathology (DMAP; Sheridan & McLaughlin, 2014) posits that different types and severity of childhood adversity have distinct effects on development. Specifically, experiences of threat in childhood (i.e., abuse, witnessing violence) are associated with fear learning, increased hypervigilance, and negative affect while experiences of deprivation (i.e., neglect) are associated with reduced cognitive abilities and a more flattened affect in adulthood (Myroniuk et al., 2024). In the context of MAT and DMAP, threat would likely be associated with more attention monitoring (hypervigilance) but less non-judgment and non-reactivity (fear learning and hypervigilance) (Machlin et al., 2019), increasing stress (Lindsay & Creswell, 2017). On the other hand, experiences of neglect/deprivation would likely be associated with less attention monitoring (lower cognitive abilities) and more non-reactivity (flattened affect, less intense emotions) (Machlin et al., 2019). MAT posits that having high attention monitoring with low non-judgment and non-reactivity in emotional contexts is particularly associated with greater stress (Lindsay & Creswell, 2017), suggesting that future work in this area may benefit from focusing on caregivers who experienced severe threat-based adversity. However, no studies have specifically examined DMAP in the context of parenting stress, parenting mindfulness, or even general perceived stress or individual-level mindfulness, so this is an interesting avenue for future research. Future research could also examine AC and IC in emotion-related contexts, as MAT posits that attention monitoring is sufficient for improvements in cognitive tests in neutral contexts, but acceptance is also necessary when tests are affective in nature (Lindsay & Creswell, 2017).

Conclusions

Overall, this dissertation contributes main effect analysis results that support the literature on the caregiver-level and child-level factors known to influence parenting stress. This dissertation also contributes novel findings examining moderators of the association between parental ACE history and parenting stress. These results have implications for future research, prevention, and intervention in two notable ways. First, the present study found that parental ACE history was associated with greater parenting stress, consistent with the literature (Lange et al., 2019; Madsen et al., 2022), which provides further evidence for the importance of the prevention of ACEs and developing interventions for caregivers with ACE history. Because ACE history has been consistently linked to greater parenting stress (e.g., Lange et al., 2019; Madsen et al., 2022), future research should continue testing potential protective factors to avoid intergenerational effects of ACEs. Second, this study found that caregivers' level of parenting mindfulness (Fernandes et al., 2021) and child socioemotional skills (Bender & Carlson, 2013) were associated with reduced parenting stress, also consistent with the literature. This has implications for intervention: increasing caregivers' levels of mindfulness may be a precise target in interventions to reduce parenting stress. This also shows that increasing children's socioemotional skills could be an especially effective target for the parent-child relationship since increasing a child's socioemotional skills is clearly beneficial for the child (Keane & Evans, 2022; Sattler & Font, 2018) but is also beneficial for reducing caregivers' parenting stress, leading to positive bidirectional influences.

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