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Childhood Maltreatment and Mental Health Implications for Adults in Midlife: Investigation of Daily Stress and Adult's Romantic Relationships

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COLLEGE OF HUMAN SCIENCES

CHILDHOOD MALTREATMENT AND MENTAL HEALTH IMPLICATIONS FOR ADULTS IN MIDLIFE: INVESTIGATION OF DAILY STRESS AND ADULT'S ROMANTIC RELATIONSHIPS

By

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ABSTRACT

This dissertation studies childhood maltreatment and its implications for mid-life adults' mental and relational functioning through two distinct manuscripts, each taking a different focus on the topic. The first manuscript considers whether experiencing emotional and physical abuse during childhood creates vulnerability for midlife adults' responses to daily interpersonal stressors (e.g., arguments). Specifically, it examines if reports of abuse by parents during childhood moderates the relationship of adults' daily interpersonal stressor exposure and severity with daily negative affect. The second manuscript considers a possible relational pathway linking child maltreatment with adult mental health. Specifically, this analysis tests if the quality of adult's romantic relationships mediates longitudinal associations of childhood maltreatment with depressive and socially anxiety symptoms, and it considers differences between men and women. Data from both studies are from the multifaceted Midlife Development in the United States (MIDUS) study. Results of the first study indicate that retrospective report of abuse by mothers was associated with a greater number of daily interpersonal stressors, more severe daily interpersonal stressors, and higher average negative affect. By contrast, report of abuse by fathers was associated only with greater average negative affect. Results from multilevel modeling yielded no evidence that experienced abuse during childhood, by either mother or father, moderated associations of daily interpersonal stressors or their severity with negative affect. In the second study, it was demonstrated that relationship quality was a potential mechanism linking child maltreatment to depressive and social anxious symptomology for both men and women. Further, gender differences were not found for either direct or indirect effects.

CHAPTER 1

GENERAL INTRODUCTION

Introduction

Childhood maltreatment is common in the United States. Millions of children are maltreated each year (Center for Disease Control, 2016; Sedlak et al., 2010). According to the United States Department of Health and Human Services (USDHHS) (2018), child maltreatment consists of abuse and neglect. Abuse is defined as "any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation," (p. 2) and neglect is defined as "failure to act which presents and imminent risk of serious harm" (p. 2). Abuse and neglect take many distinct forms under the broad umbrella of maltreatment. Childhood abuse is often characterized as either physical, sexual, or emotional abuse, and neglect is frequently classified as emotional, physical, medical, and educational neglect (USDHHS, 2018).

The USDHHS provides detailed descriptions of each form of child maltreatment. The USDHHS characterizes emotional abuse as close confinement by either tying, binding, or other forms of confinement, verbal assaults, threats of other forms of maltreatment, terrorizing the child, and administration of unprescribed substances. Physical abuse is described as shaking, throwing, intentionally dropping, hitting with a hand or object, pushing, grabbing, punching or kicking a child. Sexual abuse is indicated by sexual intrusion with and without force, involvement of a child in pornography with and without intrusion, involvement of a child in prostitution, sexually-oriented behavior involving a child including genital contact, voyeurism, and exposure to sexually explicit materials. Sexual abuse also includes a failure to monitor

children's voluntary sexual activity, and attempts or threats of sexual abuse with and without contact.

The other form of child maltreatment is neglect. Physical neglect is typified by a refusal to provide care for a diagnosed medical condition or impairment, refusal of custody (i.e., abandonment), unnecessary delay in seeking care, and inadequate provision of child supervision, nutrition, hygiene, clothing, and shelter. Other indicators of physical neglect include unstable custody arrangements and illegal transfer of child custody. Emotional neglect is characterized by inadequate nurturance and affection, child exposure to domestic violence, permitting drug and alcohol abuse, refusal of care for known behavioral or emotional problems, overprotectiveness, inadequate structure, inappropriate expectations, exposure to maladaptive environments, and inattention to emotional or developmental needs (USDHHS, 2018).

It is noteworthy that official definitions of abuse and neglect take a nominal form in terms of discrete characteristics of specific acts. Although helpful for quantifying or creating thresholds for intervention, the absence of conceptual definitions of abuse and neglect creates substantial ambiguity (Cicchetti & Toth, 2005). Some have attempt to resolve the ambiguity using defining features. For example, some suggest abuse can be characterized by overt actions that harm the child, whereas neglect can be characterized as a form of withdrawal or a failure to act that produces risk of harm (Leeb, Paulozzi, Melanson, Simon, & Arias, 2008; Rivera, Fincham, & Bray, 2018). Additionally, although drawing attention to issues of "intention to harm" or "potential risk" to children has some utility, these shorthand conventions remain problematic. Shorthand conventions are problematic because they are subject to interpretation. Child "discipline" to some (e.g., spanking, paddling) is abuse, while some cultures view those same behaviors as in children's best interest. Researchers have noted that the association

between childhood spanking and negative outcomes are exaggerated due to lack of appropriate statistical control and poor measurement (Baumrind, Larzelere, Cowan, 2002). Likewise, potential risk is clouded by which criterion is paramount (e.g., physical health, sense of self, social value), and what is considered "high risk" – both of which partially underlie hot button issues of today like "anti-vaxxers." Although not the focus of this dissertation, resolution of the ambiguities surrounding child maltreatment requires replacing nominal definitions of abuse and neglect with strong conceptual definitions.

Prevalence Rates of Childhood Maltreatment

Conceptual ambiguity produces substantial difficulty obtaining accurate prevalence estimates of child maltreatment. A recent nationally representative study of children and adolescents found that 8.9% of the sample reported lifetime physical abuse, 10.3% reported emotional abuse, 0.7% reported sexual abuse, and 11.4% reported neglect (Finkelhor, Vandermiden, Turner, Hamby, & Shattuck, 2014). In contrast, estimates from samples based on suspicions or allegations of abuse and neglect find that neglect is by far the most common form of maltreatment. In 2016, 77% of all cases reported to child protective services (CPS) were based on neglect, 18% were based on physical abuse, 9% on sexual abuse, and 6% on emotional abuse (USDHHS, 2018).

Adult's retrospective reports of childhood experiences provides yet another view on the prevalence of child maltreatment. Estimates from diverse samples suggest that 7.8% to 20% of adults report having experienced sexual abuse during childhood (Finkelhor, Turner, Shattuck, & Hamby, 2015; Molnar, Buka, & Kessler, 2001; Stoltenborgh, Van Ijzendoorn, Euser, Bakermans-Kranenburg, 2011; Whisman, 2006). Adults' retrospective reports of physical abuse during childhood range from 10 and 23% (Briere & Elliot, 2003; Cougle et al., 2010; Finkelhor

et al., 2015; Salva et al., 2013). Emotional abuse tends to be the most commonly reported form of abuse, with prevalence rates ranging from 14% to 47% (Clemmons, Walsh, DiLillo, & Messman-Moore, 2007; Salva et al., 2013; Stoltenborgh, Bakermans-Kranenburg, Lenneke, & Van Ijzendoorn, 2013). In relation to neglect, research finds that approximately 20% of adults report experiencing one or more indicators of neglect in childhood (Center for Disease Control, 2016; Stoltenborgh et al., 2013)

Patterns of Maltreatment: Conceptual Issues

Multiple features of child maltreatment create challenges for clear conceptualizations of childhood abuse and neglect (Cicchetti & Toth, 2005; Scott-Storey, 2011). The first challenging feature of child maltreatment might be labeled "distinctivism." That is, if specific forms of abuse or neglect are distinct, why does research frequently find that distinct forms of maltreatment produce similar consequences including negative internal and external attributions (Valle & Silovsky, 2000), insecure attachment (Alexander, 1992; Godbout et al., 2009; Hillyard & Wolfe, 2002; Riggs, 2010; Sandberg et al., 2010), poorer quality romantic relationships (Colman & Widom, 2004; DiLillo et al., 2009; Larsen et al., 2011; Whisman, 2006) depression (Gallo et al., 2018; Paternitiet al., 2017; Widom et al., 2007) and anxiety (Cougle et al., 2010; Gallo et al., 2018; Kuo et al., 2011; Pavlova, Perroud, Cordera, Uher, Dayer, & Aubry, 2016). Further, DiLillo and colleagues (2007) argue that outcomes of maltreatment are more common than different. A corollary to distinctivism is "severity" or the idea that some types of abuse are more severe than others (e.g., emotional versus physical) or that some manifestations of one form (e.g., voyeurism as one form of sexual abuse) is less severe than another (e.g., penetration). Another challenging feature of child maltreatment is its tendency to cluster or manifest in different forms simultaneously (Arata et al., 2005; Clemmons et al., 2007; Finkelhor et al.,

2007), perhaps because it often occurs in dysfunctional contexts such as parental substance use, psychopathology, highly family conflict, poor quality marriages, and poor parent-child relationships (Stith et al., 2009). Lastly, the temporal underpinnings or the chronicity and relative continuation of the maltreatment pose challenges to clear conceptualization.

Cumulative Maltreatment

Research has typically found that outcomes of maltreatment tend to be more similar than different. Consequently, researchers have suggested that the overall experience of maltreatment in childhood is another way to viewing maltreatment (du Plessis et al., 2019; Richard-Lepouriel et al., 2019). The overall experience of abuse and neglect in childhood, in its various forms, has been referred to as cumulative maltreatment (see Scott-Storey, 2011 for review). Many maltreated children are embedded within contexts that have numerous risk factors leaving them vulnerable to chronic maltreatment across childhood as well as experiencing multiple types of maltreatment (Finkelhor et al., 2007; Stith et al., 2009). Indeed, research has found that children who experience one form of maltreatment are at increased risk for multiple forms of maltreatment (Arata et al., 2005; CDC, 2016; Clemmons et al., 2007; Finkelhor et al., 2007).

There are several benefits to studying childhood abuse and neglect as a cumulative phenomenon. One benefit is that cumulative maltreatment is consistent with more recent perspectives of viewing maltreatment as a condition (Finkelhor et al., 2007). Prior to Finkelhor's and colleagues' advocacy for viewing maltreatment as a condition, maltreatment was traditionally viewed as an incident, defined by a discrete occurrence or event; however, many forms of maltreatment tend to occur more than once and over an extended period of time (Sedlak et al., 2010). The persistent and diverse forms of maltreatment are likely influenced by the environmental conditions or familial context (Sedlak et al., 2010; Stith et al., 2009). Children

who are embedded in such contexts are more likely to be maltreated as well as not having access to resources to cope with previous forms of maltreatment. Instead, maltreated children are likely to experience a vicious circle wherein they develop emotional and behavioral problems from maltreatment which, in turn, may leave them vulnerable to other types of maltreatment (Clemmons et al., 2007).

There has been a suggested dose-response relationship between childhood maltreatment and long-term outcomes. A dose-response relationship between maltreatment and outcomes suggests that, as maltreatment increases (i.e., greater dosage), the greater the number and severity of negative adult outcomes. The Adverse Childhood Study (ACE) found that cumulative childhood adversity, including maltreatment as well other adversities (e.g. parental divorce) were associated with poorer mental, physical, and relational health (CDC, 2016). Following the ACEs study, many studies have found a dose-response relationship between childhood maltreatment and adult's mental and relational health outcomes (Briere, Kaltman & Green, 2008; Cloitre, et al., 2009; DiLillo et al., 2007; Henschel, Doba, & Nandrino, 2019; Kim & Cicchetti, 2010; Scott-Storey, 2011). For example, Edwards et al (2003) found that men and women who reported child maltreatment were more likely to report mental health problems compared their non-abused counter parts. Overall, adults who were abused in childhood were 1.72 times more likely to have mental health problems. Further, men who reported three types of maltreatment where 2.4 times more likely to have mental health problems, and women were 2.1 times more likely to report mental health problems.

Conceptualization maltreatment in terms of a cumulative phenomenon is not without drawbacks (Scott-Story, 2011). First, there is an assumption that different forms of maltreatment have a homogenous effect on the individual. This assumption may be more relevant in some

circumstances and less important in others. For example, sexual abuse is a well-established predictor of sexual dysfunction (e.g. Dunlop et al., 2016), and considering cumulative maltreatment may be more problematic because other forms of maltreatment (e.g. physical neglect) have limited conceptual linkages to sexual dysfunction. Thus, assuming that sexual abuse and physical neglect have the same effect on sexual dysfunction may become problematic. On the other hand, there are many outcomes that are commonly associated with each form of maltreatment, which collectively fuels the viability of thinking about maltreatment cumulatively.

Secondly, although more implicitly stated, Scott-Storey (2011) discusses the notion of cumulative maltreatment does not fully capture experiencing multiple forms of maltreatment. Cumulative maltreatment cannot differentiate those who experienced one type of maltreatment from those who experienced poly-victimization, or experiencing multiple forms of maltreatment (Clemmons et al., 2007; Finkelhor et al., 2007). Thus, it is possible that more extensive and severe experiences of a singular form of maltreatment in one person and mild to moderate experiences of multiple forms of maltreatment in another would lead to the same "score." Children who experienced a highly severe, singular form of maltreatment may experience significant impairment within a concentrated number of domains while a child who experiences milder form of maltreatment but experiences multiple forms of victimization (i.e. experiencing physical and emotional abuse) which may lead to greater number of domains of impairment (Finkelhor et al., 2007).

Operationalization of cumulative maltreatment, not coincidently, has varied considerably across studies. Studies investigating cumulative maltreatment have typically dichotomized each type of maltreatment as either experiencing or not experiencing maltreatment (e.g. Clemmons et al., 2007; Cloitre et al., 2009; Higgans & McCabe, 2000), and then summed the discrete types of

maltreatment to create a composite score (Scott-Storey, 2011). This approach to cumulative maltreatment, as previously suggested, assumes, a homogeneous effect on consequence across all forms of maltreatment, or the idea that each type of maltreatment has an equal "weight" or contribution to outcomes (Scott-Storey, 2011). Furthermore, it could be argued that summation of dichotomous indicators of distinct types of maltreatment is more reflective of poly-victimization than cumulative maltreatment (Finklehor et al., 2007; 2011; Scott-Storey, 2011) unless there are specific statements regarding frequency or severity (e.g. Berenstein et al., 2003; Felitti et al., 1998). Summation of dichotomous indicators loses information on frequency and severity. For example, a singular event of non-contact sexual abuse would have the same score as someone who was repeatedly raped. This poses a significant problem in the interpretation and understanding of outcomes associated with childhood maltreatment.

Although there are conceptual differences between cumulative and domain specific perspectives of childhood maltreatment, both have merit and should be pursued. Doing so can identify how not only specific forms of maltreatment differentially shape adult's mental and relational health outcomes, but also quantify the total impact maltreatment has on adult outcomes (Scott-Storey, 2011). For the purposes of the current dissertation, I will be viewing childhood maltreatment from the cumulative perspective and investigating how the total experience of childhood maltreatment are associated with adult's mental and relational health. This decision is informed by research supporting that different forms of maltreatment are associated with the focal variables including adult's interpersonal relationships, and mental health symptoms (Colman & Widom, 2004; DiLillo et al., 2007; 2009; Dunlop et al., 2016; Larsen et al., 2011).

Childhood Maltreatment and Mental Health

Research has suggested that childhood physical, sexual, and emotional abuse, as well as neglect are associated with similar long-term outcomes. For example, physical, sexual, and emotional abuse and neglect are associated with anxiety (Gibb, Chelminski, & Zimmerman, 2007; Kuo et al., 2011), depression (Inferna et al., 2016; Norman, Byambaa, De, Butchart, Scott, & Vos, 2012), somatization (Fitzgerald et al., under review; Spertus et al., 2003), and substance use (Afifi et al., 2012). Depression and social anxiety are the two most commonly diagnosed mental health problems in the United States (Kessler et al., 2012; 2013), and each has an etiological link to childhood maltreatment (Bifulco, Kwon, Jacobs, Moran, Bunn, & Beer, 2006; Chapman et al., 2004; Gibb, et al., 2007; Inferna et al., 2016; Nanni et al., 2012; Widom et al., 2007). For example, the relative odds of meeting diagnostic criteria for depression is 2 to 5 times greater for individuals who were maltreated as children compared to those who were not (Chapman et al., 2004; Fergusson et al., 1996; Nanni et al., 2012; Norman, Byambaa, De, Butchart, Scott, & Vos, 2012; Widom et al., 2007). Similarly, childhood maltreatment is associated with increased likelihood of anxiety symptoms and diagnoses. Studies have found that childhood maltreatment is associated with a 50% to 300% increased probability of anxiety disorders including generalized anxiety, posttraumatic stress disorder (PTSD), and social anxiety disorder (Cougle et al., 2010; Fergusson et al., 1996; Norman et al., 2012). The current dissertation will focus on depressive and social anxiety symptoms.

Stress is another aspect of adult's mental health that is crucial for understanding long-term morbidity and mortality. Research has found that adults with histories of childhood maltreatment demonstrate higher levels of stress (Hong et al., 2018), and greater levels of daily stress (Weltz et al., 2016). Childhood maltreatment is associated with distinctive biological underpinnings of the stress response system that may explain the higher levels of stress

experienced (Carpenter et al., 2009; Heim et al., 2000; van der Kolk & Fisler, 1994; Weltz et al., 2016). van der Kolk (2003) reviewed research on the neurobiological impairment associated with childhood abuse and neglect. He suggests that abuse and neglect have a multifaceted effect on children's neurobiological development. He suggests maltreatment implications functioning in the brain stem, which regulates the non-voluntary processes (i.e. breathing), limbic system, which associated with fear and threat circuitry, emotional activation, the fight or flight response, and memory, and finally the cortical regions of the brain, which are associated with reasoning, cognition, and executive functioning. Further, van der Kolk (2003) argues there is increased activation in the lower regions of the brain (i.e. limbic system) and inhabitation of higher order cortical regions. Cortical regions of the brain have the ability to override activation in the lower regions, but if those brain structures are offline, individuals are stuck in a state of limbic activation. Individual's limbic brains are linked to affective responses and impulsive behavior, leading to short and long term mental health problems (van der Kolk, 2003).

When children become distressed, there is a physiological activation of their stress response system and they engage in proximity seeking behaviors to gain comfort, safety, and security from their caregivers (Ainsworth, 1979; 1989; Cassidy & Shaver, 2008). van der Kolk (2003) contends that, if children receive attention to enable a secure base, their stress response system rapidly returns to homeostasis following a stressor. However, he further argues that insecurely attached children – a common phenotype of maltreatment – frequently sustain high arousal well-after the stressor has abated. Because maltreated children are likely to be physiologically dysregulated, they may be more likely to be vulnerable to the effects of stress, view relatively benign events as stressful, and have a lower threshold for distress tolerance (Heim et al., 2000). The long term maladaptive physiological functioning associated with

maltreatment may increase mental and relational health problems (Anda et al., 2006; Dube et al., 2005; Heim et al., 2001; Lardinois, Lataster, Mengelers, Vas Os & Myrin-Germeys, 2001; Salva et al., 2013).

Attachment Theory

Attachment theory provides a theoretical foundation for this dissertation. Bowlby (1969/1970/1973) suggested that humans have an innate drive to be feel safe and secure with others and that drive starts in infancy and is consistent across the life span. Through a felt sense of safety and security with their caregivers, children create internal working models, or beliefs about themselves and others (Bowlby, 1969; Cassidy & Shaver, 2008). Through having available, attuned, and consistent caregiving children develop positive internal working models about themselves with the overarching belief being they are valued and worthy of other's attention and affection (Cassidy & Shaver, 2008). On the other hand, if children have attachment figures that are unavailable, inconsistently available, and intrusive, children will develop negative internal working models about themselves and others (Cassidy & Shaver, 2008). Children are also likely to develop negative working model of others, where others are not a source of comfort and cannot meet their needs. Patterns of attachment and internal working models tend to remain relatively stable into adulthood (Waters et al., 2000).

Childhood maltreatment can cause profound disruptions in attachment (Alexander, 1992; Hillyard & Wolfe, 2002; Waters et al., 2000). A secure attachment is based on the premise that caregivers provide support and care, and help children develop a coherent sense of self and other. Maltreatment is commonly believed to send negative messages to children about their value in relationship with others and receiving consistent messages of devaluation leads to children to generalize those expectations to others (Bowlby, 1969). Greater cumulative experiences of abuse

and neglect can prevent initial development of a healthy attachment style (i.e. positive internal working models of self and other) or can potentiate change from a secure attachment to an insecure attachment style (Waters et al., 2000). Greater experiences of maltreatment may erode children's attachment system leaving them vulnerable to use of maladaptive coping behaviors and mental health problems (Lieberman, 2004; Riggs, 2010; Striling & Amaya-Jackson, 2008).Attachment theory has also been applied to adult's romantic relationships (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987; Simpson 1990). Bartholomew and Horowitz, (1991) suggested that children's patterns of attachment to their caregivers are similar to their attachment with romantic partners in adulthood. Adults who have a positive internal working models of themselves are likely to have a secure relationship with their partner characterized by trust, vulnerability, closeness and healthy balance between independence and interdependence (Bartholomew & Horowitz, 1991). Children with poor internal working models are more likely to have relationships characterized by attachment-seeking behaviors such as conflict and jealousy, or attachment-avoidant behaviors such as dissociation, withdrawal, and an unhealthy level of independence and self-sufficiency (Bartholomew & Horowitz, 1991; Li & Chan, 2012).

Childhood Maltreatment and Interpersonal Relationships

There is evidence suggesting that adults who were maltreated as children are also at increased risk for problematic social relationships. Research has documented that adults who were maltreated have poorer quality relationships with their romantic partners (Larsen et al., 2011; Whisman, 2006), family members (Kong, 2017; Parker et al., 2016; Salva et al., 2013; Wuest et al., 2010), and children (Schwerdtfeger, et al., 2013). Adults who were maltreated tend to have smaller overall social networks and experience greater isolation and loneliness (Wilson et al., 2006). Childhood maltreatment may detract from the quality of adult's romantic

relationships, or their subjective evaluation of their relationship (Fincham et al., 2000). Numerous studies have found that childhood maltreatment is linked to poorer quality relationships in clinical (Dunlop et al., 2015), community (Godbout et al., 2009), college (DiLillo & Long, 1999) and national samples (Whisman, 2006). Furthermore, although maltreatment has been associated with poorer quality relationships in the young adulthood (DiLillo et al., 2009), and middle adulthood (Larsen et al., 2011), there has been less attention to more longstanding relationships such as those in mid and later life (Fitzgerald & Sims, under review).

Interpersonal relationships are central to adult's mental health. Sociologist, epidemiologists, and family scholars alike have suggested that social relationships may mediate the relationship between childhood maltreatment and mental health outcomes (Alexander, 1992; Kendall-Tackett, 2002; Kong, 2017; Shaw & Krause, 2002). The quality of adult's romantic relationships has been documented to have a significant impact on adult's health (see Kiecolt-Glaser & Newton, 2001; Robles et al., 2014; Whisman & Baucom, 2012; for reviews;). Nevertheless, the extent to which childhood maltreatment is associated with mental health symptomology because of its potential to undermine adult's romantic relationships remains poorly understood (Kendall-Tackett, 2002). In adulthood, romantic relationship quality may be a viable mechanism by which childhood maltreatment is associated with depressive and anxious symptomology and may serve as a point of intervention.

In one of the few studies investigating adult's romantic relationships as a potential mechanism linking childhood maltreatment to mental health symptomology, Fitzgerald, Youngberg, Ledermann & Grzywacz (under review) found that relationship quality in married adults partially mediated the cross-sectional association between childhood maltreatment and

adult's mental health. Specifically, they found that men and women who reported childhood maltreatment, defined as cumulative experiences of maternal and paternally perpetrated physical and emotional abuse, was indirectly associated with both men and women's reports of symptoms of general anxiety and somatization through marital quality. Although this study provides a foundation from which to understand the role of relationship quality in maltreated adults, future research is needed for several reasons. First, identifying other mental health outcomes (i.e. social anxiety and depression) can expand our understanding of what mental health problems adult relationships may protect against. Second, if scholars continue to use the cumulative approach to maltreatment, expanded assessments to include sexual abuse and neglect are needed to more accurately capture the full spectrum of maltreatment. Third, although the results from Fitzgerald et al., (under review) indicate that relationship quality is a potential mechanism, those findings cannot necessarily be extrapolated to all types of romantic relationships, such as committed and cohabitating relationships. Capturing different types of adult relationships allows for greater generalization of findings. Fourth, the study was cross sectional in nature so the temporal relationship between relationship quality and mental health outcomes cannot be established.

The Current Dissertation:

The overall goal of this dissertation is to enhance understanding of the long-term consequences of childhood maltreatment in midlife adults' emotional and relational health. This dissertation will achieve this goal through two distinct but related studies. The first study will investigate childhood emotional and physical abuse perpetrated by mothers and father as a moderator of the associations among the occurrence and severity of interpersonal daily stressors and daily negative affect. The objective is to determine if adults who experienced childhood abuse reported a greater number of interpersonal daily stressors and perceive experienced

stressors to be more severe. Finally, the first study will determine if adult's history of abuse moderates the relationship between interpersonal stress and negative affective symptoms. Addressing childhood maltreatment as an antecedent of daily stressors may be particularly beneficial to clinicians because clients often discuss their daily stress and hassles in therapy, and among the most common topics is conflict. Understanding the potential influence childhood maltreatment may have on stress appraisal and corresponding negative affect can allow for a trauma-informed practice which may be more efficacious.

The second study will investigate the potential mediating effect of relationship quality linking childhood maltreatment to social anxiety and depressive symptoms. Much of the current literature on childhood maltreatment and relationship quality has focused on samples of adults in emerging and young adulthood with fewer studies investigating adults in midlife and beyond. Moreover, investigation of relationship quality as a mediator of childhood maltreatment and anxious and depressive symptoms in adulthood could illuminate a point of intervention for therapists working with couples presenting with mental health problems from a trauma informed approach (Dalton et al., 2013).

This dissertation will add to the cumulative knowledge in several ways. First, the current dissertation will investigate how childhood maltreatment is linked to micro-level processes (i.e. daily interpersonal stress) as well as adult's overall perceptions of their romantic relationship influence their mental health over time. Secondly, the current dissertation will investigate how the cumulative toll of maltreatment is linked to middle aged adult's individual and relational functioning. Results of the dissertation could potentially be important to clinicians working with adults and Marriage and Family Therapists (MFTs) specifically. MFTs are uniquely trained to

treat developmental, relational, and systemic problems associated with childhood maltreatment, such as interpersonal stressors and romantic relationships.

Method

The Midlife Development in the United States (MIDUS) will be used in both papers of this dissertation. The MIDUS study is a multi-wave, interdisciplinary investigation into the health and wellbeing of midlife adults. The MIDUS study is a nationally representative sample of adults in the United States. The first wave of the MIDUS was completed in 1996 (M1) with a sample of 7,108 individuals using a telephone interview and self-administered questionnaire (SAQ). The M1 data collection was followed up approximately 9 years later using the same telephone and SAQ methods (M2). Of the original sample, 4,963 (69.2%) individuals participated in M2. In addition to follow-up of the original participants, M2 also featured numerous subprojects, including a cognitive sample (n = 4,512), daily diary (n = 2022), biomarker (n = 1,255), neuroscience (n = 331), and an oversampling of African-Americans recruited from Milwaukee (n = 592). Eligibility for those who participated in the subprojects was completion of both the telephone interview and SAQ. Lastly, MIDUS replenished the original sample in 2012 with the MIDUS Refresher Cohort (MR) consisting of an independent sample of 3,577 participants using, for the most part, the same assessments as MIDUS 1. Like the previous MIDUS studies, MR also had subprojects paralleling the methods and eligibility from M2. Projects included a daily diary study (n = 782), cognitive study (n = 2,673), biomarker (n = 863), neuroscience (n = 136), and African American over sample in Milwaukee (n = 508). The first study of the dissertation will use data from the MR SAQ and daily diary study and the second study will utilize data from the biomarker study and the SAQ from MIDUS 2.

CHAPTER 2

CHILDHOOD ABUSE AND NEGATIVE AFFECTIVE: THE ROLE OF INTERPERSONAL DAILY STRESS

Introduction

Experiencing a stressor, or an event appraised to be stressful and elicits an affective response (Folkman, Lazarus, Gruen, & DeLongis, 1986), is common among adults. There is significant variation in adult's appraisals of the threat imposed by stressors (Mroczek & Almeida, 2004). Affective responses to stressors can take various forms, including psychological symptoms such as worry, sadness, anger, shame, (Liu et al., 2018), or physical symptoms such as aches, pains, and poor appetite (Grzywacz et al., 2004). Research has found that experiences of daily stress are associated with individual outcomes (Chiang et al., 2018; Nguyen-Feng, Baker, Merians, & Frazier, 2017), as well as relational outcomes (Jacobson et al., 2000; Neff & Karney, 2007).

Research suggests that childhood abuse in any form may play shape appraisals of stressors and subsequent affective responses in adulthood (Hong et al., 2018; Liu et al., 2018; Weltz, Armeli, Ford & Tennen, 2016). Because of the interpersonal nature of abuse, adults may be particularly sensitive to interpersonal stressors, defined as an interaction or avoidance of an interaction that occurs within adult's relationships. Prior research has focused on overall severity of a day's stress (Weltz et al., 2016) with less attention paid to interpersonal stressors specifically. Research has shown that childhood abuse is linked to processes that may be influence on a daily basis including more volatile conflict resolution styles (Knapp et al., 2017) and more frequent conflict (Bigras et al., 2015). On the other hand, a microlevel examination of daily interpersonal stress is not yet well understood. The lack of inquiry into daily interpersonal

stressors in adults who were abused in childhood misses an opportunity for understanding micro-level processes that may contribute to long-term individual and relational health.

Childhood abuse predominantly occurs within the family system (Sedlak et al., 2010). Children's mothers and fathers are the most common perpetrators of physical and emotional abuse. Mothers are more likely to perpetuate abuse than fathers – presumably because mothers spend more time caring for children. Mothers, compared to fathers, have been identified as more likely to physically and emotionally abuse (Meinick et al., 2017; Sedlak et al., 2010). Experience of abuse by a primary caregiver (e.g., mothers) may greater potential to shape psychosocial development compared to other adult figures (e.g., fathers) (Ainsworth, 1989). Therefore, it is possible that children's primary caregiver may have an impact on adult's interpersonal relationships. The purpose of the current study is to examine maternally and paternally perpetrated childhood abuse as a predictor of the number of daily interpersonal stressors and the severity of those interpersonal stressors. Additionally, childhood abuse will be examined as a moderator of adult's daily interpersonal stress, including the number of daily interpersonal stressors experienced and the perceived severity of the stressors, and adult's affective symptoms.

Literature Review

Childhood abuse is common in the United States, with more than 1 in 3 adults reporting childhood abuse (Center for Disease Control, 2016). Childhood abuse is associated with many deleterious outcomes in adulthood, including psychological distress (DiLillo et al., 2007), depression (Chapman et al., 2004; Widom, Dumont & Czaja, 2007), anxiety (Cougle et al., 2010; Fergusson et al., 1996), aggression (Widom, Czaja, & Dutton, 2014), and substance use (Dube et al., 2005). Perhaps due to the interpersonal nature of abuse, childhood abuse has also been associated with interpersonal problems, such as less stable romantic relationships and marriages

(Colman & Widom, 2004), poorer conflict resolution styles (Knapp et al., 2017), greater frequency of conflict (Bigras et al., 2015), and poorer communication (Banford-Witting & Busby, 2018). Adults abused in childhood have also been suggested to report more severe stress (Hong et al., 2018), greater daily stress, and stronger negative affective reactions to stress (Liu et al., 2018; Weltz et al., 2016).

Although deleterious outcomes are associated with the experience of abuse in childhood (DeRobertis, 2004), there may be differential effects based of whether the perpetrator was the mother or father. Recent studies have suggested that mothers are more likely to physically and emotionally abuse their children (Meinick et al., 2017; Romero-Martinez, Figueiredo, Moya-Albiol, 2014). The higher rates of physical and emotional abuse perpetrated by mothers may be partially attributed to greater involvement in parenting. Mothers tend to be the primary caretakers for children and adolescents, and consequently are more involved in their children's lives (Ainsworth, 1989; Straus, 1991; Vissing et al., 1991). Mothers, in comparison to fathers, are more likely to serve as children's "secure base," and are primarily responsible for children's socioemotional development (U.S. Department of Health & Human Services, 2006). If mothers are simultaneously children's secure base and the source of distress (i.e. abuse), children may develop ineffective or maladaptive coping strategies, and have negative attributions about relationships. This, however, does not discount the impact of paternally perpetrated abuse because, like maternal abuse, it has longstanding effects on children (Straus, 1991).

Differential Exposure and Differential Vulnerability Hypotheses

The differential exposure and vulnerability hypotheses (Dohrenwend 1973; Kessler, 1979) provide a framework from which to understand how childhood abuse may shape adult's experiences of daily interpersonal stress. The differential exposure hypothesis suggests that

individuals in disadvantaged groups (i.e. abused children) are exposed to a disproportionate number of physical, social, and psychological stressors compared to their more advantaged counter parts (i.e. non-abused children). It is postulated that because disadvantaged groups experience a greater number of stressors earlier in life, they will also experience more frequent stressors over the life-course (Dohrenwend, 1973). In the context of abuse, the differential exposure hypothesis would suggest that adults with a history of abuse are likely to report a greater number of interpersonal stressors in daily life compared to their non-abused counterparts.

The differential vulnerability hypothesis suggests that adults in disadvantaged groups are more vulnerable to the effect of stressors (Kessler, 1979; Grzywacz et al., 2004). The vulnerability can be attributed to fewer resources for coping with the stressors (Marino et al., 1994), less effective, and more maladaptive coping strategies (Schumm, Stines, Hobfoll, & Jackson, 2005) and altered biological functioning (Kessler, 1979). In the context of childhood abuse, the differential vulnerability hypothesis suggests that affective reactions to stressors will be greater for those who have experienced childhood abuse because of a "kindling effect." A kindling effect suggests that greater experiences of abuse lowers adult's threshold for what is appraised to be stressful (Schumm, et al., 2005). Additionally, a kindling effect also suggests that accompanying a lower threshold, there are also stronger affective reactions to appraised stressors.

To the current point, empirical investigation has identified individual factors contributing to variation in daily stress. Studies have found that gender (Matud, 2004), genetics, (Wichers et al., 2007), personality (Longua et al., 2009), education (Grzywacz & Marks, 2004), psychopathology (Nguyen-Feng et al., 2017), and age (Mroczek & Almeida, 2004) are influential in daily stress processes. Although this body of research has effectively documented

the contributions of biological, psychological, and demographic factors, scholars have advocated for increased attention on developmental factors contributing to variation in daily stress (Carpenter et al., 2007; Hanson & Chen, 2010; Glaser et al., 2006). Studies have suggested that childhood experiences (Hanson & Chen, 2010), including abuse (Zollman, Rellini, & Desrocher, 2013), may be a factor in understanding daily variation is stress and affective responses.

The differential exposure and vulnerability models offer frameworks from which to understand how childhood abuse shapes interpersonal stressors and affective symptoms. Accordingly, research has begun to examine childhood abuse in the context of daily stress and affective symptoms. Research on differential vulnerability hypothesis has found that childhood abuse and daily stress is linked to negative affect, psychopathology, and greater cortisol secretion (Bublitz & Stroud, 2013; Cristóbal-Narváez, Sheinbaum, Ballespí, Mitjavila, Myin-Germeys, Kwapil, & Barrantes-Vida, 2016; Rauchenberg et al., 2017; Weltz et al., 2016). In a study examining the differential vulnerability hypothesis, Weltz et al., (2016) examined 1,634 college undergraduate students using a month-long daily diary study. They found that childhood physical abuse or family violence, emotional abuse, and neglect moderated the relationship between daily stress severity and anxious affect. On the other hand, they also found that no forms of childhood abuse or neglect were associated with global negative affect, angry affect, or depressed affect (Weltz et al., 2016). Additionally, another recent study suggests that childhood abuse is important to understanding adult's relationships and daily affective symptoms. Liu and colleagues (2018) found that parent-perpetuated childhood abuse moderated the association between midlife adult's provision of care to the perpetrating parents, and negative affect (Liu, et al., 2018). These results indicate that aspects of adult's contemporary relationships are influential

in understanding the linkages between childhood abuse and affective symptoms, but not fully capture the idea of interpersonal stress.

Although the study by Weltz et al., (2016) laid a foundation to understand child abuse, daily stress, and negative affect by demonstrating that childhood abuse was linked to anxious affect, there are limitations to their study. First, they used an overall index of stress severity, so it remains unclear whether the number of stressors plays a role (i.e. differential exposure hypothesis). Secondly, a convenient sample of college students limits generalizability to other populations, so conclusions drawn may or may not apply to adults at different places in the lifecycle. Thirdly, the lack of findings on global, depressed and angry affect may be attributed to investigation into specific forms of abuse and neglect rather than the total experiences. A dose-response relationship has been found in linking childhood abuse to adult mental health outcomes (i.e. Edwards et al., 2005) and this may also be true in adult's daily life.

In comparison to the differential vulnerability model, there has been relatively little attention paid to childhood abuse and the occurrence of daily stressors. Research has found that childhood abuse has linked to problematic interpersonal relationships (Birgras et al., 2015; Whisman, 2006), but there is little investigation into the daily variation of interpersonal stress. The relationship between childhood abuse and daily interpersonal stressors is not yet understood and may help explain variation in adult's daily affective symptoms.

The Present Study

The objective of the current investigation is to test maternally and paternally perpetrated childhood abuse as a predictor of daily interpersonal stress, and negative affect. Based on the differential exposure model, it is hypothesized that adults who experienced abuse during childhood will report more frequent and severe daily interpersonal stressors. Based on the idea

of differential vulnerability hypothesis, it is hypothesized that maternally and paternally perpetrated childhood abuse will moderate the relationship between number of daily interpersonal stressor and the severity of interpersonal stressors and daily negative affect.

Methods

The study used data from the National Survey of Midlife in the U.S. (MIDUS) refresher cohort, collected from 2011-2014. The purpose of this cohort was to replenish the original MIDUS sample with a nationally representative sample of 3,577 adults aged 23 to 76. Paralleling methods of original MIUDUS, the refresher cohort used a telephone interview and self-administered questionnaire (SAQ). A subset of MIDUS refresher participants (n=782) were recruited into the National Study of Daily Experiences (NSDE). The NSDE consisted of an eight day daily telephone interview stratified across days of the week and time of the year to account for daily and seasonal variation. A total of 6,256 (782 participants X 8 days) interview days were possible, and 5,849 interview days were completed yielding an overall completion rate of 93.2%. Childhood abuse and control variables were assessed using the SAQ, and daily stress and negative affect were assessed with the NSDE. Due to missing data on maternally and paternally perpetrated childhood abuse measure in the SAQ, the analytic sample for the current study was reduced from 782 to 682.

Participants

The analytic sample (N = 682) was primarily female (54%) and the mean age of 47.54 years old (SD = 12.69), ranging from 25 to 75 years old. Participants in the study were predominantly White (87.4%) and highly educated. Few participants never graduated from high school (3.5%), earned a GED (1.2%), or completed only high school (14.4%), and instead went to college but did not earn a degree (16.9%), graduated from college (25.2%), attended graduate

school (1.2%), or earned a masters (20.4%) or doctoral / professional degree (4.5%). Most adults were married (67.5%) but about one-in-seven participants (13.5%) reported being separated or divorced, 4.4% were widowed, and 14.5% never married. Participants had a mean household income of $87,744.36.

Measures

Childhood Abuse: Childhood abuse was assessed in the SAQ using three items: one emotional abuse item (i.e. name calling), one physical abuse item (i.e. getting slapped), and one severe physical abuse item (i.e. getting burned). Items were rated on a 4-point scale ranging from 1 (*Often*) to 4 (*Never*) on how often their mother and father engaged in those acts. The 1 emotional abuse item and 2 physical abuse items were reverse coded and summed together. A score was created for both maternally and paternally perpetrated abuse. Greater scores reflect greater overall experiences. Scores had a possible range from 3 to 12. Adults were classified as having been abused if they reported a score of greater than 3.

Interpersonal Daily Stress: Daily stress was assessed using Daily Inventory of Stressful Experiences (DISE; Almeida et al., 2002), a semi-structured telephone interview. The DISE assesses stressful events over the previous 24 hours. The current study used the three interpersonal stressor items from the DISE: stress related to a friend, having a disagreement with someone, and avoiding a disagreement with someone. Daily interpersonal stress was measured in two ways: the number of interpersonal stressors experienced in a day, and the total severity of the experienced stressors. Participants either responded affirmatively or negatively to the presence of an interpersonal stressor (no = 0, yes = 1) and a sum score was created by adding the total number of interpersonal stressors experienced. The range of possible scores was 0-3. To measure stressor severity, respondents were asked how stressful the event was on a four-point

Likert type scale ranging from 1 (*Very*) to 4 (*Not at All*). A severity score was created by first recoding the variables such that higher scores reflected greater stressor severity, then summing the severity of each stressors to obtain an overall index of daily stress severity. To prevent a loss of data, if adults did not report a stressor, they received a (1) on stressor severity, which assumes that there is no reported stressor and the experience of a stressor appraised as "not all affected" are comparable. The range of stressor severity was from 3-12.

Negative Affect: Negative affect was measured using 13 items as a part of the daily interview. Negative affect has four subscales of including feelings of shame, anger, anxiety, and sadness. Items were coded on a five-point Likert type scale ranging from 0 (*None of the Time*) to 4 (*All of the Time*). A stem of "The next questions are about your mood today. How much of the time today did you feel…." was used. Example items include "How much of the time today did you feel nervous?" "How much of the time today did you feel ashamed?" "How much of the time today did you feel angry" and "How much of the time today did you feel sad nothing could cheer you up?" The 14 items were averaged together to capture negative affect.

Analytic Plan

Prior to examining the first hypothesis, descriptive statistics were examined. First, means and standard deviations of the number of stressors, stress severity, and negative affect were calculated and compared across maternally and paternally perpetrated abuse. An ANOVA was used to test the mean differences of number of interpersonal stressors, interpersonal stress severity, and negative affect in adults who were abused and those who were not.

The first hypothesis was based on the differential exposure model where adults who were abused by their mothers and fathers would experience a greater number of interpersonal stressors and evaluated interpersonal stressors to be more severe. This hypothesis was tested by fitting

hierarchical linear models controlling for the effects of age, race (white / non-white), gender (male / female), and education (no college / at least some college) (Grzywacz, Almeida, Neupert, & Ettner, 2004; Mroczek & Almeida, 2004). Hierarchical linear models estimated both a within person model (level 1) and a between-person model (level 2), allowing intercepts and slopes to vary between individuals. The person-centered score of number of daily stressors and stress severity score was entered in as a level 1 predictor. Control variables, including age, education, and gender, were entered in as level 2 predictors (between-person). To test whether childhood abuse moderates the relationship between daily stress and negative affect childhood abuse was added as a between person variable (level 2) centered on the mean. Additionally, the prior days negative affect was controlled for because affect may spillover from one day to another and therefore to capture the unique impact of interpersonal stressors controlling for prior days negative affect is necessary. Because these previous days symptoms are controlled for, results should be interpreted as changes in affective symptoms across days (Grzywacz et al., 2004). For the differential exposure model, the number of interpersonal stressors and the severity of interpersonal stressors was modeled as the outcome in separate models. For the differential vulnerability model, negative affect was modeled as the outcome and four interaction terms were entered: paternal abuse by number of interpersonal stressors and severity of interpersonal stressors and maternal abuse by number of interpersonal stressors and severity of interpersonal stressors.

Results

Over half the sample (53.4%) reported maternal abuse (M = 4.58, SD =2.12) and 60.4% of the sample reported paternal abuse (M = 4.85, SD =2.30). Table 1 present means and standard deviations across adults who were and were not abused. Maternally perpetrated abuse was

associated with experiencing a greater number of daily interpersonal stressors, greater interpersonal stressor severity, and greater negative affect. On the other hand, number of daily interpersonal stressors and interpersonal stress severity did not differ in adults who were abused by their father versus those were not. Like mothers, adults who were abused by their fathers reported greater average daily negative affect. In relation to the types of interpersonal stressors, adults who had an argument with someone during the previous day tended to report that it was with a family member (72.6%). Overall, adults reported arguments on 10.3% of days. Adults who avoided an augment also tended to avoid arguments with family members (57.3%). Adult's reports arguments on 17.3% of days. Lastly, stress related to friends occurred less frequently, occurring on only 4.6% of total interview days.

Hierarchical linear models examining the differential exposure model can be seen in Table 2. Among the covariates, only age ($b = -.01$, $p < .05$) was associated with number of interpersonal stressors experienced, such that older adults reported fewer interpersonal stressors; education was marginally significant ($b = -.11$, $p < .06$) while gender ($b = .01$, $p > .05$) and race ($b = -.01$, $p > .05$) were not significant. Maternal abuse emerged as a marginally significant predictor ($b = .03$, $p < .09$) while paternal abuse was not significant ($b = -.01$, $p > .05$). A second hierarchical linear model was fit to examine the severity of daily stressors. Results indicate that maternally perpetrated childhood abuse was associated with greater severity of daily interpersonal stressors ($b = .11$, $p < .05$) where greater maternal abuse in childhood was associated with greater interpersonal stressor severity. Paternal abuse, however, was not significant ($b = -.01$, $p > .05$). Education ($b = -.38$, $p < .05$) and age ($b = -.03$, $p < .001$) also emerged as significant covariates such that the higher the educational achievement and older

adults reported less severe daily interpersonal stressors. Race (b = -.05, p > .05) and gender (b = .25, p > .05) were not significant predictors of daily interpersonal stress severity.

Hierarchical linear modeling results examining the differential vulnerability model for number of daily interpersonal stressors are displayed in Table 3. Results of the hierarchical linear model investigating the number of daily interpersonal stressors indicated that none of the covariates were non-significant including race (b = -.01, p > .05), education (b = -.06, p > .05), age (b = .03, p > .05), and gender (b = .17, p > .05). Regarding the effects from childhood abuse and daily stress variation in negative affect, neither maternal (b = .01, p > .05) nor paternal abuse (b = -.01, p > .05), nor number of daily interpersonal stressors (b = -.001, p > .05) were significant predictors of negative affect. Regarding the interaction term between childhood abuse and number of daily interpersonal stressors was non-significant for both maternal (b = .01, p > .05) and paternal abuse (b = -.01, p > .05). In a separate model with severity of interpersonal stressors, a similar pattern of results was found. None of the covariates were significant predictors of daily variation in negative affect, including race (b = -.01, p > .05), education (b = -.06, p > .05), age (b = .01, p > .05), and gender (b = .15, p > .05). Regarding maternally and paternally perpetrated abuse, neither maternal (b = .01, p > .05) nor paternal abuse (b = -.01, p > .05) predicated daily variation in negative affect. Surprisingly, it was also found that daily interpersonal stressors also did not predict variation in negative affect (b = .02, p > .05). The interaction terms between maternally and paternally perpetrated and severity of stressors on negative affect were also non-significant. Specifically, the interaction term between maternal abuse and stressor severity (b = .00, p > .05) and paternal abuse (b = -.01, p > .05).

Discussion

Conceptualized through the differential and exposure and vulnerability models, the current study sought to understand the relationship between paternally and maternally perpetrated childhood abuse, greater daily interpersonal stressors in adulthood, and negative affect. At the bivariate level, it was found that adults who reported maternally perpetrated abuse reported a greater number of interpersonal stressors, greater stress severity, and greater negative affect across days compared to non-abused adults. Regarding fathers, the number and severity of interpersonal stressors did not differ between adults who reported abuse relative to those who did not; however, those who were abused by their father did report greater negative affect. Hierarchical linear models examining the differential exposure hypothesis found that maternally perpetrated childhood abuse was not associated with the number of interpersonal stressors experienced, but significantly predicted greater severity of interpersonal stressors in adulthood. Paternal abuse was not linked to either the number of interpersonal stressors or the severity. Results of the differential vulnerability model found that neither maternal nor paternal childhood abuse moderated the relationship between number of interpersonal stressors and negative affect nor stress severity and negative affect.

Results of hierarchical regression analysis indicate that adults who experienced greater levels of maternal abuse reported greater severity of interpersonal stressors, providing some support for the differential exposure model. Prior research has found that childhood abuse leaves adults vulnerable to more severe appraisals of stress (Heim et al., 2000; Hong et al., 2018; Kessler, 1979). This study documents that maternally perpetrated childhood abuse is a risk factor for greater severity of interpersonal stress despite the fact that fathers were more abusive than mothers in the current sample. Because children are primarily raised by their mothers, the imprint of maternal abuse may have a greater impact. If mothers were emotionally and

physically abusive while also being the simultaneous source of support and nurturance, children are placed in a predicament where they are dependent on their mother for survival while also recognizing they are also a source of pain (Liu et al., 2018). Children who are abused by their parents, and particularly their mothers, learn that sources of comfort and safety are also sources of distress, which can shape their perceptions and beliefs about interpersonal stress (van der Kolk, 2003). Additionally, children who were abused in childhood may come to expect that stress is accompanied by physical or emotional aggression. Thus, when stressors occur, adults evaluate the stressors based on the potential consequences in childhood.

Counter to prior research investigating the differential vulnerability hypothesis (e.g. Weltz et al., 2016), childhood abuse did not moderate the number of daily stressors or the severity of the stressors, on negative affect. Despite the discrepant findings, there are several plausible explanations for why the current study's findings differed from prior research. In relation to the differential vulnerability hypothesis, Kessler (1979) proffered that there are biological (i.e. endocrine system) and environmental (i.e. social support) influences contributing to adult's vulnerability to stress. Childhood abuse is an environmental stressor that has been widely linked to biological dysfunction (Heim et al., 2001; van der Kolk, 2003). Childhood abuse has been linked to problems in managing arousal at the physiological and psychological levels (Conway et al., 2004; van der Kolk, 2003) and adults may not only experience higher levels of affective symptoms compared to those who are not abused (Weltz et al., 2016), but may experience symptoms for a prolonged period of time. Prior days symptoms were controlled for in the present analysis, so prolonged psychological and physiological dysregulation would lead to little variation in abused adult's affective symptoms (Conway et al., 2004). For example, Raes and Hermans (2008) found that childhood abuse was associated with depressive symptoms

through brooding, which is a form of rumination defined by an emotional reactive state of pondering. Further, they found that that abuse was not associated with depressive symptoms through reflection, which is an emotionally neutral form of thinking. If adults brood and revisit the original event in an emotionally reactive way, they are likely to reexperience those same affective reactions, limiting variability of symptoms across days.

Another reason that there may not be support for the differential vulnerability hypothesis could be based on differentiating perpetrator of abuse. Prior research has examined specific types of childhood maltreatment, including physical, sexual, and emotional abuse, and neglect (Weltz et al., 2016). The current study "split" emotional and physical abuse across perpetrator while Weltz et al., (2016) focused on the experiences of emotional abuse. Future research may want to investigate the type of childhood abuse (i.e., emotional abuse) in relation to interpersonal stressors.

A third reason that may explain why maternally and paternally perpetrated abuse did not moderate the relationship between stress and negative affect may be due to the interpersonal nature of stressors. Interpersonal stressors such as disagreement, avoidance of disagreements, or problems with friends may have lingering effects over multiple days. For a majority of people in the study, interpersonal stressors most commonly occurred within close relationships (i.e. spouse). Conflict and stress with close relationships, particularly unresolved conflict, may lead to affective responses over longer periods of time compared to affect that is elicited from other forms of stressors, such as events at work/school.

Another possible explanation is the "file drawer effect". The file drawer effect suggests that unsupported hypothesis and non-significant results are not published in peer reviewed journals and literally and metaphorically placed into a file drawer not to be seen by others.

Previous research may have already identified that perpetrator-based conceptualization of childhood abuse does not moderate adult's reports of daily interpersonal stress and negative affect, but it may not have been documented or published (Easterbrook et al., 1991).

Limitations

Although the study has several strengths including assessment of both stressor severity and number of stressors and a short-term, longitudinal design using a large sample of adults, this study is not without limitations. First, as previously suggested, the measurement of childhood abuse was limited to physical and emotional abuse and did not capture sexual abuse or neglect. Secondly, the current study focused on interpersonal stressors and did not fully account for other non-interpersonal stressors such as weather, work related problems, unexpected financial expenditures, injury, or illness among others. Furthermore, the interpersonal stressors only focused on conflict, avoidance of conflict, or generic stress when other forms of interpersonal stressors may be present. For example, feeling let down by others (i.e. them not fulfilling a promise or obligation) could be a stressor. Thirdly, the current study investigated interpersonal stressors across a wide range of people (e.g. spouse, family, coworker), and abuse may impact each of these relationships differently. Separating out emotionally close with emotionally neutral relationships may provide a different set of results because an argument with a spouse likely has a greater impact than an analogous argument with a co-worker. The assessment of childhood abuse was self-reported and retrospective and subject to recall bias. Lastly, the current study utilized a predominantly White sample so there may be demographic differences that may shape interpersonal stress and negative affect.

Table 1: Means and Standard Deviations Among Study Variables Across Perpetrator of Abuse

	Mother			Father		
	No Abuse *M*(*SD*)	Abuse *M*(*SD*)	*F*	No Abuse *M*(*SD*)	Abuse *M*(*SD*)	*F*
Stress Severity	1.44 (1.90)	1.80 (2.27)	9.44**	1.53 (2.10)	1.70 (2.13)	.165
Stressor Sum	.58 (.67)	.67 (.76)	5.74*	.59 (.71)	.65 (.73)	.35
Negative Affect	.27 (.33)	.37 (.44)	13.68***	.27 (.33)	.37(.43)	8.81**

Note. * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

Table 2: Unstandardized Estimates of Differential Exposure Model Predicting Interpersonal Stress

	Stressor Sum	Stressor Severity
	b (*SE*)	*b* (*SE*)
Intercept	1.11 (.17)***	2.54 (.51)***
Education	-.11 (.06)	-.36 (.16)**
Age	-.01(.00)***	-.03 (.01)***
Sex	.00 (.06)	.25 (.16)
Race	-.00 (.08)	-.05 (.24)
Maternal Abuse	.03 (.02)	.11 (.04)*
Paternal Abuse	-.00 (.01)	-.00 (.04)

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

Table 3: Unstandardized Estimates of Differential Vulnerability Model Predicting Negative Affect

	Stress Severity	Stressor Sum
	b (*SE*)	*b* (*SE*)
Intercept	.11 (.22)	.10 (.23)
Education	-.06 (.07)	-.06 (.07)
Age	.00 (.00)	.00 (.00)
Sex	.17 (.06)	.15 (.07)
Race	-.13 (.10)	-.13 (.10)
Maternal Abuse	.01 (.02)	.01 (.02)
Paternal Abuse	-.01 (.02)	-.01 (.02)
Stressor Sum	-	.02 (.02)
Maternal Abuse * Sum	-	-.03 (.02)
Paternal Abuse*Sum	-	.02 (.02)
Stress Severity	.00 (.04)	-
Maternal Abuse * Severity	.00 (.00)	-
Paternal Abuse*Severity	.00 (.00)	-

Note. Previous days negative affect was controlled for in both models and was significant at $p < .001$ in both models.

CHAPTER 3

CHILDHOOD MALTREATMENT AND SOCIAL ANXIETY AND DEPRESSIVE SYMPTOMS: IS RELATIONSHIP QUALITY A MECHANISM

Introduction

Childhood maltreatment is common in the United States. Prevalence rates of childhood maltreatment in adults, defined by physical, sexual, or emotional abuse, and emotional and physical neglect, range from 13-36% (CDC, 2016; Lee et al., 2017; Vandermindena et al., 2019). Further, women tend to experience more maltreatment compared to men (DiLillo et al., 2007; Sedlak et al., 2010). Mental health problems are common in the general population (Kessler et al., 2012; 2013), and elevated among adults with a history of maltreatment. Research has found that maltreatment is associated with anxiety disorders such as generalized anxiety, posttraumatic stress disorder, panic disorder, and social anxiety disorder (Cougle et al., 2010), as well as depression (Chapman et al., 2004), somatization (Fitzgerald, Youngberg, Ledermann, Grzywacz, under review), and substance use (Dube et al., 2005).

Decades of research indicate that social relationships have significant implications for men's and women's physical (House et al., 1988; Robles et al., 2014; Umberson, Williams, Powers, Liu, & Needham, 2006) and mental health (Coyne et al., 2001; Reblin & Uchino, 2008; Whisman, 2007). Among adult's social relationships, adult's romantic relationships, whether in or out of the context of marriage, are among the most important relationships in adulthood (Cherlin, 2004; Whisman & Baucom, 2012). The quality of adult's romantic relationships has, not coincidentally, been of great interest to scholars and practitioners alike. Characteristics of high-quality relationship include support, affection, respect, problem solving, while having low levels of criticism, strain, unresolved conflict, and hostility (Fitzgerald et al., under review).

Social relationships, including romantic relationships, have been suggested to be a mechanism linking childhood maltreatment with adult mental health outcomes (Fitzgerald et al., under review; Kendall-Tackett, 2002; Kong 2017; Shaw & Krause, 2002; Sperry & Widom, 2013). Maltreatment is a form of interpersonal betrayal (Finkelhor & Browne, 1985) that can lead children to develop negative views or "internal working models" (Alexander, 1992; Kong & Moorman, 2016). Negative internal working models of self and others commonly continue into adulthood, leaving the maltreated individual vulnerable to poorer romantic relationship (Bartholomew & Horowitz, 1991; Godbout et al., 2009; Waters et al., 2000). Having a poorer quality relationship, characterized by strain, disengagement, and conflict leaves adults at risk for mental health problems (Cougle et al., 2010; Kessler et al., 2012; 2013; Whisman, 2007). Despite research documenting the potential mechanistic feature of adult's interpersonal relationships (Fitzgerald, under review; Kendall-Tackett, 2002; Kong 2017; Kong et al., 2019), to the current point, only one study has tested the quality of adult's romantic relationships as a mechanism linking maltreatment during childhood to mental health symptoms (Fitzgerald, et al, under review). They found that relationship quality partially mediated the association between childhood abuse with symptoms of anxiety and somatization for both men and women. Although the results indicate that relationship quality may be a mechanism, the study had several limitations. First, Fitzgerald and colleagues studied physical and emotional abuse, thereby offering a narrow perspective on maltreatment. They focused exclusive on married adults, limiting generalizability to other forms of adult's romantic relationships (i.e. cohabitating, committed relationship). Finally, Fitzgerald and colleagues used cross sectional data so it cannot be determined whether mental health predicts relationship quality or relationship quality predicts mental health. The current study aims to address these limitations by investigating relationship

quality as a mechanism linking cumulative maltreatment, defined by physical, sexual, and emotional abuse as well as physical and emotional neglect across childhood, to symptoms of depression and social anxiety using a longitudinal design.

Childhood Maltreatment

Childhood maltreatment is public health problem (Center for Disease Control, 2016; Cicchetti & Toth, 2005). As a predominantly regulatory and legal concept, researchers have struggled to conceptualize maltreatment and agree on optimal measurement strategies. Some have suggested that specific forms of maltreatment are associated with specific outcomes, suggesting the importance of measuring specific types of maltreatment. The impact of specific forms of maltreatment on specific outcomes is suggested to occur in which the domain the maltreatment occurred. For example, sexual abuse has been associated with problems in sexual functioning (Dunlop et al., 2016), physical abuse with anger and aggression (Briere & Runtz, 1990), emotional abuse with self-esteem (Briere & Runtz, 1990), and neglect with cognitive development (Hillyard & Wolfe, 2002).

Others argue that cumulative experiences of maltreatment across childhood lead to worse outcomes (for review see Scott-Storey, 2011). Cumulative maltreatment suggests that, although there are different forms of maltreatment, there is more in common among different types of abuse and neglect than differences (see DiLillo et al., 2007 for discussion). For example, physical, sexual, and emotional abuse as well as neglect have all been associated with depression, anxiety, and poorer quality relationships (Colman & Widom, 2004; Cougle et al., 2010; DiLillo et al., 2009; Dunlop et al., 2016; Larsen et al., 2011; Nanni, Uher, & Danese, 2012; Widom et al., 2007). Given the commonality of outcomes among the typologies of maltreatment, investigating how the total experience of maltreatment is linked to adult relational

and mental health outcomes is important. Numerous other scholars have found that the cumulative experience of maltreatment explains a greater proportion of symptomology compared to any singular form of maltreatment (Briere, Kaltman & Green, 2008; Cloitre, et al., 2009; Edwards et al., 2003; Henschel, Doba, & Nandrino, 2019; Kim & Cicchetti, 2010).

Depression and social anxiety in adulthood are two common mental health outcomes of childhood maltreatment. Research has consistently linked childhood maltreatment to depressive and socially anxious symptoms (Cougle et al., 2010; Chapman et al., 2004; Feerick and Snow, 2005; Molnar, Buka, & Kessler, 2001; Nanda et al., 2016; Simon et al., 2008). For example, in a nationally representative study, Cougle et al., (2010) found that childhood maltreatment was associated with a 46% increase in the odds of meeting criteria for social anxiety disorder. Similarly, results of a recent meta-analysis indicate that childhood maltreatment was associated with an 282% increase in the odds of depression (Nelson et al., 2017).

Attachment Theory

Attachment theory provides a theoretical foundation from which to understand the linkage between childhood maltreatment and adult's mental and relational health. Attachment theory posits that children's relationship with their caregivers is crucial to children's socioemotional development (Bowlby, 1969). Based on their relationship with their caregivers, children can be classified into three styles of attachment including secure, anxious, and avoidant (Ainsworth, 1979; 1989). Children with a secure attachment can safely explore the world and rely on caregivers for protection, nurturance, affection, and soothing in times of distress. A secure attachment style is also characterized by comfort with both interdependence, or reliance on others for comfort, and independence, or the ability to be self-sufficient and self-soothe (Ainsworth, 1979; 1989).

However, if attachment figures are abusive, neglectful, or unavailable, children are likely to develop an insecure attachment style (Alexander, 1992; Waters et al., 2000). Maltreated children often have contradictory experiences of being reliant on caregivers for survival, while also recognizing they may be a source of distress (Alexander, 1992). Such adaptations are often categorized by increasing proximity seeking behaviors as a result of fearing abandonment (anxious attachment) or distancing behaviors because of fearing emotional closeness (avoidant attachment). Together, anxious and avoidant attachment are classified as insecure attachment (Alexander, 1992; Bowlby, 1969; Waters et al., 2000).

Derived from childhood attachment, romantic attachment suggests that adult attachment orientations parallel attachment styles during childhood (Hazan & Shaver, 1987; Kirkpatrick & Hazan, 1994; Simpson, 1990). Like in childhood, adult attachment is suggested to shape an individual's behavior and perceptions in their romantic relationships (Hazan & Shaver, 1987; Simpson, 1990). Securely attached adults have a healthy balance of interdependence and independence. For example, adults with a secure attachment have been documented to have better communication skills, higher levels of positive affect, and greater trust in their partners (Cassidy & Shaver, 2008). On the other hand, insecurely attached individuals use a variety of behaviors to maintain individual comfort in their relationship including activating and deactivating strategies. Activating strategies are behaviors that attempt to increase proximity to their attachment figures. Examples of activating strategies include conflict, jealousy, poorer communication, and destructive interactions (Campbell et al., 2005; Cassidy & Shaver, 2008; Collins et al., 2006; Li & Chan 2012). Adults with an insecure attachment may also deploy deactivating strategies, or behaviors that maintain autonomy and emotional distance. Deactivating strategies include emotional avoidance and numbing, as well as less commitment

and self-disclosure (Campbell et al., 2005; Collins et al., 2006; Mikulincer, Florian, Cowan & Cowan, 2002; Li & Chan 2012).

Attachment theory provides a foundation from which to understand the linkage between childhood maltreatment, relationship quality, and mental health (Bifulco et al., 2006; Godbout et al., 2007; Kendall-Tackett, 2002; Muller et al., 2000; Runtz & Shallow, 1997; Sandberg et al., 2010; Shaw & Krause, 2002). Childhood maltreatment often leads to an insecure attachment (Godbout et al., 2009; Sandberg et al., 2010) which, in turn, may lead to unhealthy dynamics within the relationship including have fewer healthy problem-solving skills, less effective coping strategies, and viewing their partner as being too distant or too intrusive (Alexander, Feeney, Hohaus, & Noller, 2001; Pistole, 1989; Simpson, 1990; Simpson et al., 2002). The less adults feel safe and secure with their partners, the greater mental health symptoms they tend to experience. For example, insecurely attached individuals, in comparison to those who are securely attached, are more likely to have mental health problems such as mood disorders, dissociation, somatization, posttraumatic stress symptoms (Cassidy & Shaver, 2010; Cienchawski et al., 2002; Mikilincer & Shaver, 2012; Pynoos, Steinberg & Piacentini, 1999; Sandberg et al., 2010), as well as social anxiety and depression (Chow & Ruhl, 2014; Eng, Heimberg, Hard, Schneie & Liebowitz, 2001; Marazziti; Williams & Riskind, 2004).

Childhood Maltreatment, Relationship Quality, and Depressive and Social Anxiety Symptoms

The interpersonal nature of childhood maltreatment impedes the quality of both men's and women's romantic relationships (DiLillo et al., 2009; Whisman, 2006). Research indicates that different forms of abuse and neglect commonly impact the quality of adult's relationships (Colman & Widom, 2004; DiLillo et al., 2009; Larsen et al., 2011; Riggs & Kaminsky, 2010; Whisman, 2006). On the other hand, fewer studies have investigated cumulative maltreatment in

relation to adult's relationships (Fitzgerald et al., under review). For example, DiLillo et al., (2007) found that cumulative maltreatment was associated with greater psychological distress and poorer relational functioning including less intimacy, more relationship violence, and more negative attitudes and reactions to sex. There may be an additive or dose-response effect of maltreatment where each accumulated experience of abuse and neglect further reinforces negative beliefs about relationships and the safety of others (Scott-Storey, 2011).

Few studies have investigated interpersonal pathways linking childhood maltreatment to depressive and socially anxiety symptoms in adulthood. Research has suggested that social relationships are one potential mechanism (Kendall-Tackett, 2002; Shaw & Krause 2002; Sperry & Widom, 2013; Stevens et al., 2013). A small body of research suggests that interpersonal dynamics such as controlling, distancing behaviors, lack of assertiveness (Whiffen, Thompson & Aube, 2000) and rejection sensitivity (Massing-Schaffer et al., 2015) link childhood maltreatment to depressive symptoms. The overall quality of adult's romantic relationships may also be a mechanism.

Fitzgerald, et al (under review) found that cumulative abuse, operationalized by summing assessments of physical and emotional abuse during childhood, was directly and indirectly associated with anxiety and somatization through marital quality. Furthermore, they found the effects were largely similar for men and women. Although this study provides preliminary support for the possibility that relationship quality may be a mechanism, additional research is needed for several reasons. First, longitudinal research is needed to establish temporal ordering between relationship quality and mental health outcomes so that directionality of effects can be determined. Secondly, inclusion of other forms of maltreatment beyond physical and emotional abuse can provide a more complete picture of child maltreatment. Thirdly, their study included

only married individuals and expanding to other relationship forms, including committed and cohabitating relationships could create greater generalizability of findings. Lastly, continued research is needed to identify additional mental health outcomes such as depressive and social anxiety symptoms as outcomes.

Gender Differences

An additional consideration is that there may be differences between men and women regarding maltreatment, relationship quality, and mental health. Research has suggested that girls (17.5/1000) demonstrate a slightly higher rate of overall maltreatment than boys (16.3/1000) in child protective services samples (Sedlak et al., 2010). Similarly, adult's retrospective reports of childhood maltreatment indicate that women tend to report greater overall experiences of maltreatment compared to men (DiLillo et al., 2007), so if a dose-response relationship between maltreatment and mental and relational health outcomes exists, women would likely to report poorer quality romantic relationships and mental health outcomes because they have experienced a greater "dose" of maltreatment.

Additionally, gender differences between men and women related to maltreatment and mental health are of interest. Although national studies have shown that women tend to report more frequent social anxiety and depressive symptoms (Kessler et al., 2012; 2013), a recent meta-analysis found that, women were more likely to be depressed and anxious than men, but the differences were not statistically significant (Gallo et al., 2018). Despite findings from Fitzgerald et al. (under review) indicating the effects of gender on maltreatment, relationship quality, and anxiety and somatization were largely the same for men and women, continued investigation is needed to either confirm of dispute initial findings. It could be argued that because sexual abuse,

which is predominately experienced by women (Sedlak et al., 2010; Stoltenborg et al., 2011), was not measured in their study, gender differences may exist but not have been detected.

The Present Study

The current study was designed to investigate adult's retrospective reports of childhood maltreatment, current relationship quality, and subsequent depressive and social anxiety symptoms 6-60 months later. Based on attachment theory and previous research, it is hypothesized that childhood maltreatment will be associated with greater levels of depressive and social anxiety symptoms and poorer relationship quality for both men and women. Secondly, it is hypothesized that childhood maltreatment will be indirectly related to both men's and women's depressive and socially anxious symptoms through relationship quality. Gender is explored as a moderator of the relationship between maltreatment, relationship quality, and depressive and anxiety symptoms and based on findings form Fitzgerald et al., (under review), it is expected there will be no gender differences between men and women.

Methods

Data are from the National Survey of Midlife in the United States (MIDUS). The first MIDUS study (MIDUS 1) comprised a nationally representative sample of 7,108 noninstitutionalized English-speaking adults in 1995-1996 that participated in a telephone interview and self-administered questionnaire (SAQ). The first follow up assessment was started in 2004 (MIDUS 2) mirroring the data collection methods of MIDUS 1 and included 4,963 participants from the original sample. MIDUS 2 also included a biomarker project comprised of a subset of participants who completed both telephone interview and SAQ (n =1054) as well as a new subsample of racial minorities (n = 201), totaling 1255 participants. There was variation in the time lag between the MIDUS 2 and the biomarker follow up, ranging from 6-60 months. In

addition to biological samples (i.e. fasting glucose), the biomarker project provided additional self-administered scales. For the current study, the indicators of relationship quality were drawn from the MIDUS 2 SAQ, which was assessed first, and childhood maltreatment, depression, and social anxiety were taken from the biomarker follow-up project. Given the retrospective nature of the childhood maltreatment assessments, reports do not figure to change over time, and therefore childhood maltreatment was used as the independent variable despite being measured in the biomarker study.

Participants

Participants were included in the current study if they participated in MIDUS 2 and the biomarker follow up study. Of the 1255 participants who participated in both the biomarker and MIDUS 2 study, 785 participants were currently in a committed relationship. Participants were 50.3% female and were predominantly White (93.9%); 1.8% were African American, 1.4% were Native-American, and 2.8% reported other. Regarding education, 21.2% of participants reported having a high school education or GED as their highest form of completed education, 21% reported some college but did not earn a degree, 24.3% reported having a bachelor's degree, 4.5% reported some graduate school but did not graduate, 13.8% reported a master's degree, and 4.7% reported a professional degree (e.g. M.D., J.D., Ph.D). Just over two thirds of participants reported working (68.8%) while others were retired (20.9%), unemployed (1.3%) or laid off (.3%), homemaker (5.5%), and student (.9%). Respondents reported an average household income of $87,525.02 (*SD* = $62,588.06).

Measures

Childhood Maltreatment: Childhood maltreatment was assessed with the Childhood Trauma Questionnaire (CTQ; Bernstein, Fink, Handelsman, & Foote, 1994). The CTQ is a 28-

item scale assessing childhood abuse and neglect prior to the age of 18. Items are scored on a five-point Likert scale, ranging from 'Never' to 'Very Frequently'. The range test-retest value for the CTQ is .80-.97 and been found to have construct validity and criterion-related validity (Bernstein et al., 2003). The emotional neglect subscale and two items on the physical neglect were reverse coded. Example items include "People in my family said hurtful or insulting things to me," "People in my family hit me so hard that it left me with bruises of marks," "Someone molested me," "I felt loved," and "My parents were too drunk or high to take care of me." Childhood maltreatment was operationalized for this study using the total score by summing the emotional, physical, and sexual abuse and physical and emotional neglect scales together such that higher scores reflect greater experience of maltreatment. Using the total score of the CTQ has been used in prior research (e.g. du Plessis et al., 2019; Richard-Lepouriel et al., 2019). Prevalence rates of maltreatment are determined by using clinical cutoff scores for each subscale, defined by scores above 8 for physical abuse, physical neglect, and sexual abuse, scores above 10 for emotional abuse, and scores above 15 for emotional neglect (Walker et al., 1999).

*Support***:** Perceptions of support from their partner was assessed with 6 items. Questions were rated on a 4-point Likert type scale ranging from 1 (*A lot*) to 4 (*Not at all*). Items included "Does he or she really care about you," "Does he or she understand the way you feel about things," "Does he or she appreciate you," "Can you rely on him or her for help if you have a serious problem," "Can you open up to him or her if you need to talk about your worries," "Can you relax and be yourself around him or her." Items were reverse coded and summed together such that higher scores reflected higher levels of support.

Strain: Perceptions of strain was assessed with 6 items. Items included "Does he or she make too many demands of you," " Does he or she make you feel tense," "Does he or she argue

with you," "Does he or she criticize you," "Does he or she let you down when you are counting on him or her," "Does he or she get on your nerves." The six items were scored on a Likert type scale ranging from 1 (*often*) to 4 (*never*). Items were summed together, and greater scores are indicative of lower levels of strain.

Disagreement: Disagreement was measured by self-reports of three questions from the MIDUS study. Participants were asked how much they disagree on "money matters, such as how much to spend, save or invest," "household tasks, such as what needs doing and who does it," "leisure time activities, such as what to do and with whom" and rated on a 4 point Likert type scale ranging from 1 (*A lot*) to 4 (*Not at all*). Items were summed together, and greater scores are indicative of lower levels of disagreement.

Depressive Symptoms: The Center for Epidemiologic Studies Depression (CES-D; Radloff, 1977) assessed depressive symptoms over the past week. The CES-D is a 20-item scale rated on a four-point Likert type scale ranging from *Rarely or none of the time* (0) to *Most or all of the time* (3) with three reverse coded items. Example items include "I felt depressed" and "I could not 'get going'". Items were summed together to obtain an overall index of depressive symptoms. Higher scores endorse higher levels of depressive symptoms.

Social Anxiety: Social anxiety symptoms were assessed using the Liebowitz Social Anxiety Scale (Fresco et al., 2001). The scale includes 9 items rated on a four-point Likert type scale. Items consistent of 9 different scenarios which may be anxiety provoking and were rated on a severity scale ranging from *None* (1) to *Severe* (4). Example items include "Being the center of attention" and "Talking to people in authority." Scores of the 9 items were summed to provide a severity score.

Control Variables: Age and time lapse (in months) between MIDUS 2 and the biomarker project were entered in as continuous control variables, maternal and paternal depression during respondent's childhood, parental divorce, and past diagnosis of anxiety or depression at MIDUS 2 were entered as a dichotomous (yes / no) variables. Education was also dichotomized (no college / at least some college). Maternal and paternal depression, as well as parental divorce, were controlled for because they commonly covary with maltreatment and may attenuate effects of maltreatment and mental health (Stith et al., 2009). A previous diagnosis of either anxiety or depression at the MIDUS 2 assessment was controlled for because a previous diagnosis is likely to be related to future symptomology. Control variables were harvested from the MIDUS 2 SAQ and telephone interview. All measures demonstrated adequate internal consistency of greater than .70.

Statistical Analysis

IBM SPSS 25 was used to generate means, standard deviations, and correlations. MPlus was used to test the structural equation models (SEM). SEM was used to test the direct and indirect (mediated) effects from childhood maltreatment to relationship quality, and symptoms of social anxiety and depression. SEM compares the proposed theoretical model to the observed data and compares the extent to which the theoretical model fits the empirical data (Kline, 2013). Numerous indices are commonly used to evaluate the model-data fit, including comparative fit index (CFI), Tucker-Lewis index (TLI), Chi-square statistic, and root mean square error of approximation (RMSEA). CFI and TLI values greater than .90 demonstrate adequate fit and values greater than .95 demonstrate good fit; RMSEA values below .06, and a non-significant chi-square test also demonstrate adequate fit (Hu & Bentler, 1999; Kline, 2013).

In the structural equation model, relationship quality was measured by three indicators: support, strain, and disagreement (Fitzgerald et al., under review). Latent variables with three indicators are, by definition, saturated, or have zero degrees of freedom, no chi-square statistic, and the following fit statistics: CFI = 1, TLI = 1, RMSEA = 0. Therefore, to assess model-data fit, the overall model was examined, which included childhood maltreatment as the independent variable, relationship quality measured as a latent variable with support, strain, and disagreement as indicators, and depressive and anxious symptoms as outcome variables; the model also included the control variables (See Figure 1). To examine gender differences, a male and female model were separately fit and subsequently compared to determine if gender moderated any of the direct or indirect paths. The indirect (mediating) effects from men and women's reports of maltreatment on depressive and socially anxious symptomology through relationship quality were tested using 95% bias-corrected bootstrap confidence intervals (CI) based on 5,000 bootstrap samples.

Results

Descriptive Results

Descriptive statistics, including correlations, means, standard deviations, and gender differences are presented in Table 1. Prevalence rates of childhood maltreatment were derived from clinical cutoff scores (Bernstein et al., 2003; Walker et al., 1999); 13.3% of men reported physical abuse, 7.7% reported sexual abuse, 19.7% reported physical neglect, 12.6% reported emotional abuse, and 9.7% reported emotional neglect. Regarding women, 15.9% reported physical abuse, 18.7% reported sexual abuse, 18.5% reported physical neglect, 21% reported emotional abuse, and 13.4% reported emotional neglect.

Results of bivariate associations are displayed in Table 1. Correlations indicate that all study variables, including maltreatment, support, strain, and disagreement, depressive symptoms and socially anxious symptoms were significantly associated with each other for both men and women. To examine bivariate gender differences among the study variables, a one-way ANOVA was conducted. Results indicate that, compared to men, women reported greater cumulative childhood maltreatment, more severe social anxiety, and less perceived spousal support. No gender differences were found for depressive symptoms, relationship disagreement, and strain.

Structural Equation Modeling

The model-data fit of the SEM model was adequate, CFI = .976, TLI = .910, RMSEA = .045, χ^2 (48) = 86.506, p < .001); the chi-square statistic for males was χ^2 (24) = 43.225 and females was χ^2 (24) = 42.830. Results of the SEM model are depicted in Table 2. In terms of the associations between childhood maltreatment, relationship quality and depressive and anxious symptoms, support was found for the first hypothesis. Childhood maltreatment was associated with relationship quality for both men (ß = -.251, p <.001) and women (ß = -.223, p <.001), such that greater maltreatment was associated with poorer relationship quality. Childhood maltreatment was associated with greater mental health symptomology for both men and women. Specifically, childhood maltreatment was associated with greater depressive symptoms in men (ß = .329, p <.001) and women (ß = .265, p <.001) as well as social anxiety symptoms in men (ß = .118, p <.05) and women (ß = .115, p <.05). Men and women's perceptions of relationship quality were inversely associated with both depressive and social anxiety symptoms. For men, relationship quality was negatively associated with depressive (ß = -.179, p <.001) and social anxiety symptoms (ß = -.165, p <.01). Women demonstrated a similar pattern of results where

higher levels of relationship quality were associated with lower levels of depressive (ß= -.175, p <.01) and social anxiety symptoms (ß = -.154, p <.01)

Next, the mediating effect of relationship quality between maltreatment and depressive and anxious symptoms was tested using bootstrapping procedures (see Table 3). For men, there was a significant indirect effect from maltreatment to depressive symptoms (ß= .045, 95% CI [.019, .085]), such that greater experiences of childhood maltreatment were associated with lower levels of relationship quality, which was then associated with lower levels of depressive symptoms. An indirect effect from men's reports of childhood maltreatment to social anxiety symptoms was also observed (ß= .042, 95% CI [.014, .085]). Significant indirect effects from maltreatment to depressive and social anxiety symptoms were observed in women. Specifically, maltreatment was indirect related to depressive (ß= .039, 95% CI [.019, .085]) and socially anxious symptoms (ß= .034, 95% CI [.011, .072]).

To test gender differences, the paths were constrained to be equal in both the male and female models. If the model fit is significantly worse, defined by a significant chi-square difference test statistic, gender moderated the pathway. Chi square difference test for the path from childhood maltreatment to relationship quality (χ^2 (1) = .553, p > .05), anxiety (χ^2 (1) = .073, p > .05) and depression (χ^2 (1) = 3.27, p > .05) were not significant, indicating that gender did not moderate paths from maltreatment to relationship quality and mental health symptoms. Regarding gender differences from relationship quality to mental health problems, anxiety (χ^2 (1) = .055, p > .05) and depression (χ^2 (1) = .068, p > .05) were both non-significant, which again suggests that men and women did not differ on the direct paths from relationship quality to mental health outcomes. Lastly, the indirect effects were compared across gender. The indirect

effect from maltreatment to both socially anxious and depressive symptoms were not significantly different for men and women, indicating no gender differences.

Discussion

Research has identified that childhood maltreatment is a risk factor for mental health problems and interpersonal relationships is one possible mechanism linking maltreatment to mental health. Few studies, however, have investigated the role of romantic or intimate relationships, let alone determine if there are differences between men and women. To address these gaps, adult's relationship quality was tested as a longitudinal mechanism linking childhood maltreatment and depressive and social anxiety symptoms using a large sample of men and women. Results indicate that for both men and women, relationship quality was a possible mechanism linking childhood maltreatment to symptoms of depression and social anxiety. Further, no evidence of gender differences was found, suggesting that maltreatment affects men's and women's relationship quality and mental health outcomes in a similar fashion.

The first notable contribution of this study is documenting the longitudinal association between maltreatment, relationship quality and mental health outcomes. Previous research has documented that childhood maltreatment is associated with depressive (Widom et al., 2007) and social anxiety symptoms (Simon et al., 2008) and poorer quality relationships (Colman & Widom, 2004; Larsen et al., 2011). However, only one previous study has tested relationship quality as a mechanism from maltreatment to mental health symptomology (Fitzgerald et al., under review). Like Fitzgerald and colleagues' study of cumulative abuse during childhood, the current findings demonstrate that relationship quality may be a viable mechanism linking maltreatment during childhood to adult's depressive and social anxiety symptoms.

The current study also contributes to the current knowledge base by establishing temporal ordering between relationship quality and depressive and socially anxious symptomology. Previous research has suggested the mental health symptoms are predictive of relationship quality (DiLillo et al., 2007; Dunlop et al., 2015; Walker et al., 2009) while other researchers have suggested that relationship quality is predictive of adult's mental health functioning (Beach et al., 1990). The results of the current study lend support to relationship quality serving as a mechanism indicating that adults who perceive a higher quality relationship with their partners demonstrated fewer mental health symptoms (Kendall-Tackett, 2002).

Results of the current study found no evidence of gender differences between men and women in relation to direct or indirect effects. The effect of maltreatment appears to have similar effects on men and women's relationship quality and depressive and social anxiety symptoms. Although we found that women reported significantly greater cumulative maltreatment (DiLillo et al., 2007; Sedlak et al., 2010) and social anxiety (Kessler et al., 2012), gender did not moderate the relationship between maltreatment, relationship quality, and anxious and depressive symptoms for either the direct or indirect effects. Previous research investigating gender differences between maltreatment, relationship quality and mental health has been largely inconsistent. Some studies find that specific forms of maltreatment impact relationship quality differently for men and women (Colman & Widom, 2004), others find a similar pattern of results (Dube et al, 2005; Larsen et al., 2011), and other studies have found mixed results (DiLillo et al., 2009). Differences observed between the current study and previous research may be due to several factors. First, results may differ due to differences in measurement of child maltreatment. Maltreatment was conceptualized cumulatively, which encompasses multiple forms of maltreatment over the entire course of childhood. Previous research has focused on official court

records (Colman & Widom, 2004), frequency of maltreatment (Larsen et al., 2011) and severity of maltreatment (Whisman, 2006). Secondly, we used a large, national sample of men and women in middle adulthood who were generally in more established relationships and older, so cohort effects may also be at play. Previous studies have used younger samples including college students (DiLillo et al., 2007), and newlyweds (DiLillo et al., 2009).

Although attachment was not explicitly measured in the current study, findings could have important theoretical implications. Research has widely established that attachment is a mediator between childhood maltreatment and mental health symptomology including posttraumatic stress symptoms, depression, anxiety, and self-esteem (Bifulco et al., 2006; Sandberg et al., 2010; Widom, Czaja, Kozakowski, & Chauhan, 2018). In comparison to securely attached adults, insecurely attachment adults have more negative perceptions of their partner's behavior (e.g. perceiving partners as less supportive), which governs their responses to their partners (e.g. conflict, problem solving, and communication) (Briere & Rickards, 2007; Cassidy & Shaver, 2010; Godbout et al., 2009; Hazan & Shaver, 1987; Mikuliner & Shaver, 2012; Simpson, 1990). Attachment is suggested to shape adult's perceptions (i.e. supportiveness of their partner) and behavior (i.e. disagreement) within romantic relationships, so adults who have greater attachment insecurity will have more negative views of their partner and consequently have poorer quality relationships, leaving them vulnerable to mental health problems (Hollist & Miller, 2005; Sandberg et al., 2010).

Limitations

Results of the current study demonstrate that relationship quality may be a mechanism linking childhood maltreatment to men and women's depressive and anxious symptoms in adulthood. These results should be interpreted while considering the limitations of the project.

First, the measure of childhood maltreatment is retrospective in nature, thus reports may be subject to recall bias and social desirability. Using multiple forms of assessment including substantiated reports of maltreatment or corroborating reports from others can hinder these biases. Secondly, cumulative childhood maltreatment provides a broader view on abusive and neglectful experiences over the course of childhood; however, it cannot be discerned which types of maltreatment exert effects on relationship quality and mental health. Thirdly, although we controlled for a prior diagnosis of depression and anxiety, many adults may have subclinical symptoms and future research should address stability effects using the same measures over time. The use of cross-lagged assessments can provide more definitive results of the longitudinal association between maltreatment and mental health symptoms. Fourthly, the sample was approximately 90% White, so generalizations are limited; future investigation into racial minorities is needed.

Table 4. Correlations, Means, Standard Deviations Among Study Variables

	1	2	3	4	5	6
1. CTQ	-	.307**	.158**	.179**	-.204**	.182**
2. CESD	.374**	-	.336**	.212**	-.198**	.142**
3. Social Anxiety	.160**	.367**	-	.150**	-.109*	.194**
4. Strain	.220**	.219**	.174**	-	-.689**	.637**
5. Support	-.196**	-.182**	-.112*	-.644**	-	-.579**
6. Disagreement	.155**	.217**	.162**	.611**	-.447**	-
M (*SD*) Males	35.82 (11.33)	7.31 (7.25)	15.59 (4.42)	12.87 (3.54)	22.12 (2.81)	9.26 (2.00)
M (*SD*) Females	38.31 (15.09)	7.68 (7.70)	17.09 (4.91)	13.06 (3.85)	21.33 (3.46)	9.21 (2.17)
F (*df*)	-2.61 (783)	-.690 (783)	-4.50 (783)	-.716 (783)	3.49 (783)	.294 (783)
p	**.009**	.490	**< .001**	.212	**< .001**	.769

Note. Men are presented below the diagonal and women are above the diagonal. Bolded *p* value demonstrates significant mean differences between men and women. CTQ = Childhood Trauma Questionnaire, CESD = Depressive Symptoms. *$p < .05$, **$p < .01$

Table 5: Direct Effects from Structural Equation Model for Men and Women

	Males				Females			
Effect	*b*	*SE*	ß	*p*	*b*	*SE*	ß	*p*
Maltreatment -> RQ	-.030	.007	-.251	<.001	-.024	.006	-.223	<.001
Maltreatment -> Social Anxiety	.046	.020	-.118	<.05	.039	.017	-.115	<.05
Maltreatment -> Depression	.212	.030	-.329	<.001	.137	.025	-.265	<.001
RQ -> Social Anxiety	-.528	.179	-.165	<.01	-.489	.168	-.154	<.01
RQ -> Depression	-.903	.193	-.179	<.001	-.903	.193	-.175	<.01

Note. RQ = Relationship Quality

Table 6: Indirect Effects from Maltreatment to Mental Health Symptoms for Men and Women

Gender	Effect	ß	95% CI
Male	Maltreatment-> RQ -> Depression	.045	[.019, .085]
	Maltreatment-> RQ -> Social Anxiety	.042	[.014, .085]
Female	Maltreatment-> RQ -> Depression	.039	[.019, .085]
	Maltreatment-> RQ -> Social Anxiety	.034	[.011, .072]

Note. RQ = Relationship Quality.

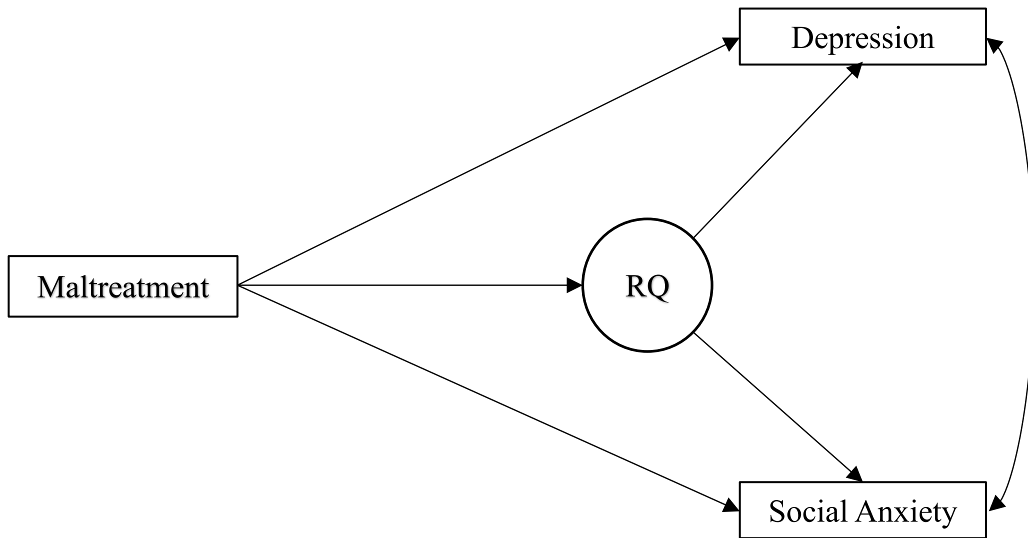

Figure 1: Hypothesized Structural Equation Mediational Model

Note. RQ = Relationship Quality.

CHAPTER 4

GENERAL DISCUSSION

The overall goal of the current dissertation was to investigate how childhood abuse and neglect are linked to mental and relational health in midlife adults. In comparison to younger samples, the focus of childhood maltreatment and its implications for mental and relational functioning in midlife adults is notably under-researched (Fitzgerald & Sims, under review). In midlife adults, findings commonly indicate that maltreatment is associated with poorer mental and relational health (e.g. Chapman et al., 2004; Kong & Moorman, 2016; Salva et al., 2013). Although research has documented associations between childhood maltreatment and adult's mental and relational health in midlife, there is little information about the interplay among them. Given that interpersonal relationships have been consistently found to be associated with adult's mental health (see Whisman & Baucom, 2012 for a review), the dissertation investigated the relationships between childhood abuse and neglect, interpersonal stressors, relationship quality, and mental health outcomes in two studies.

The primary objective of the current dissertation is to advance understanding of how childhood maltreatment is linked to midlife adult's mental and relational health. Both study 1 and study 2 found that childhood abuse and neglect were associated with higher levels of mental health problems, which is consistent with a larger body of knowledge (Bublitz & Stroud, 2013; Cristóbal-Narváez, Sheinbaum, Ballespí, Mitjavila, Myin-Germeys, Kwapil, & Barrantes-Vida, 2016; Rauchenberg et al., 2017; Weltz et al., 2016) as well as longer standing mental health concerns (Chapman et al., 2004; Cougle et al., 2010; Feerick and Snow, 2005; Fergusson et al., 1996; Molnar, Buka, & Kessler, 2001; Nanda et al., 2016; Simon et al., 2008; Widom et al.,

2007). Specifically, study one focused on daily affective symptoms and study two investigated relationship quality and depressive and socially anxious symptoms. Specifically, study one found that maternally and paternally perpetrated abuse was associated with higher average levels of daily negative affect and study two found that maltreatment was linked to depressive and social anxiety symptoms.

There is a substantial body of knowledge documenting the relationship between child maltreatment and adult's mental health, yet the role of adult's interpersonal relationships is not well understood. One of the objectives of the current dissertation was to investigate adult's interpersonal relationships as a potential factor contributing to mental health problems in adults who were abused and neglected in childhood. Preliminary research has found that interpersonal relationships play a role in understanding the association between childhood abuse and neglect and adult's daily affective symptoms (Liu et al., 2018) as well as more stable mental health problems (Chapman et al., 2004; Cougle et al., 2010). Regarding study one, it was found that although maternal abuse was associated with greater severity of interpersonal stressors, neither maternally or paternally perpetrated abuse moderated the relationship between number of interpersonal stressors nor the severity of those stressors and affective symptoms. Study two, however, found that childhood maltreatment was longitudinally associated with both depressive and social anxiety symptoms through relationship quality with their partners.

Results of the differential exposure hypothesis in study one was partially supported. Maternally perpetrated abuse was found to increase the severity of adult's interpersonal stressors; however, maternal abuse was only a marginal predictor of increased number of interpersonal stressors in daily life. Consist with prior research (Bigras et al., 2015), it was found that adults who were abused by their mothers in childhood experienced a greater number of interpersonal

stressors and these results are consistent with such findings. Additionally, the current study advances research in two primary ways. First, the current study examined daily variation in the number interpersonal stressors and the severity of stressors rather than a general frequency of stressful interpersonal events (i.e. conflict), providing a more nuanced understanding of interpersonal stress at the daily level.

A second contribution of this study is providing a comparison of mothers and fathers. Supporting the hypothesis, it was found that maternal abuse, although occurring less frequently than paternal abuse, was associated with greater severity of interpersonal stressors. Mothers tend to be the primary attachment figure, are more involved in their children's lives, and plays a greater role in children's socioemotional development (Ainsworth, 1979; 1989; Ebbert et al., 2018) and the betrayal inherent in abuse can be particularly harmful. Children are dependent on mothers of for comfort and security while they are simultaneously getting abused, creating ambivalence about their relationship with their mothers. These early experiences are then generalized to other relationships and serve as the foundation for future relationships (Bowlby, 1969; van der Kolk, 2003). These experiences are then carried forth into adulthood and consequently, adult's may evaluate events in their lives as more stressful because their childhood experiences of abuse dictate that interpersonal relationships are relatively unsafe and even a source of distress.

The differential vulnerability hypothesis was not supported and there are several explanations to why childhood abuse may not moderate the relationship between daily interpersonal stressors. Prior research into differential vulnerability hypothesis has found that childhood abuse moderates the relationship between overall stress severity and daily negative affect (e.g. Weltz et al., 2016), but results of the current study indicate that interpersonal stressors

may operate differently. One possibility is that because childhood abuse impairs biological and psychological functioning and regulation (van der Kolk, 1996), it may be that interpersonal stressor elicit a stronger and more prolonged stress response compared to non-interpersonal stressors (i.e. car trouble). The multilevel analysis controlled for prior days symptoms; thus, the results are interpreted as changes in affective symptoms across days (Grzywacz et al., 2004), but if there is a prolonged affective response to stressors across days there may be little variation in changes in affective symptoms.

Relatedly, another possible reason there was not support found for the differential vulnerability hypothesis is that adults who were abused in childhood may ruminate (Conway et al., 2004). Adults who were abused in childhood may ruminate over a stressor for multiple days and by doing so, they continually experience a similar affective response across multiple days. For example, adults who had an argument with their spouse are likely to have affective responses during and immediately following the argument, but if adults mentally revisit the argument the following day, much of the previous affect experience may linger. Raes and Hermans (2008) found that childhood abuse was associated with depressive symptoms through brooding, which is defined by “self-critical moody pondering” (p. 1068), but not through reflection, an emotionally neutral form of thinking. Adults who were maltreated may engage in more brooding rumination, which may lead to greater affective reactivity and little fluctuation in negative affect across multiple days.

In comparison to the broader scope of interpersonal relationships examined in study one, the second study of the dissertation provided a narrower focus by examining the spousal relationships. Study two examined the mediating effect of relationship quality from childhood maltreatment to depressive and socially anxious symptoms. Specifically, adult’s romantic

relationships partially mediated the association between childhood maltreatment and depressive and socially anxious symptoms. Extant studies who have investigated the mediating effect of adult's interpersonal relationship on mental health outcomes (i.e. Fitzgerald et al., under review), have been cross sectional in nature. Thus, one of the advancements of the second study was identifying the longitudinal relationship between childhood maltreatment, relationship quality, and mental health outcomes. Secondly, study two provided a more comprehensive measure of maltreatment as well as expanding knowledge on outcomes of relationship quality in adults who have been abused and neglected in childhood.

These results provide additional some support for attachment theory. Attachment is theorized to be an organizational system governing adult's behavior and emotional responses. Anxious adults' primary orientation is based on maintaining closeness while avoidant adults strive to maintain emotional distance (Hazan & Shaver 1987). Results indicate that relationship quality, measured by indicators of support, strain, and disagreement, partially explained the relationship between maltreatment and mental health outcomes. From an attachment perspective, adults who experienced greater levels of maltreatment will have greater attachment insecurity and perceive their partners as less supportive, have more strained transactions, and report more conflict in their relationship, leaving them vulnerable to mental health problems. Adult's internal working models are shaped early in childhood and maltreatment may distort children's expectation, evaluations, and attributions about close relationships (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987; Simpson, 1990; Waters et al., 2000). Anxiously attached adults, who have a positive view of others and negative view of themselves, become distressed because they perceive their partners to not be supportive enough whereas avoidant adults, who have a negative view of others and positive view of themselves, will perceive their partners as

emotionally intrusive. Both styles leave adults vulnerable to altered perceptions of their partners as well as maladaptive behavior (i.e. strain). Having a more negative perception of their partner and their relationship overall leaves adults vulnerable to mental health problems including depression, anxiety, and posttraumatic stress symptoms (Bifulco et al., 2006; Mikuliner & Shaver, 2012; Sandberg et al., 2010; Widom, Czaja, Kozakowski, & Chauhan, 2018).

While the finding of relationship quality partially mediated the association between childhood maltreatment and depressive and social anxiety symptomology over time is an improvement, it also leaves the association not fully accounted for. Although the impact of romantic relationships on mental health outcomes is quite robust (see Whisman & Baucom, 2012 for review), other factors may also explain the relationship. For example, Fitzgerald (under review) examined the role of emotional support for family, friends, and romantic partners as mediators between maltreatment and adult's mental health outcomes. He found that emotional support from their partners was associated with both less severe social anxiety and depressive symptoms, but emotional support from family members was the strongest predictor for lower levels of depression and emotional support from friends was the stronger predictor for less severe social anxiety symptoms. Thus, it appears that although partners play an important role in adult's mental health, inclusion of adult's other attachment relationships could prove to be fruitful. Additionally, maltreatment not only affects adult's interpersonal relationships, but also contributes to poorer individual functioning that may also help account for the relationship between maltreatment and mental health (Riggs, 2010). For example, personal control (Shaw, Krause, & Chatters, 2004), emotional regulation (Coates et al., 2014), shame, (Coates et al., 2014; Shahar, Doron, Szepsenwol, 2015), and self-criticism (Shahar, et al., 2015) have each been suggested to mediate the relationship between maltreatment and mental health outcomes. Thus, it

is likely that both individual and relational factors link maltreatment to depressive and social anxiety symptoms.

Clinical Implications

These findings could be informative for marriage and family therapists (MFTs) working with individuals, couples, and families. These findings highlight the importance of childhood abuse and neglect on adult's interpersonal relationships such that childhood abuse and neglect increase the severity of stress in adult's interpersonal relationships as well as leading to poorer quality relationships. Consequently, when adult's come to therapy with complaints of relationship problems and interpersonal stressors, assessing for childhood maltreatment may be particularly beneficial. This will enable MFTs to provide more efficacious, trauma-informed interventions.

Attachment-based interventions have been found to be successful with adults who experienced maltreatment in childhood and may be particularly effective with interpersonal problems (Dalton et al., 2013; MacIntosh & Johnson, 2008). Emotion Focused Therapy (EFT) is an attachment-based, experiential form of therapy that may be particularly effective. Johnson (2002) also suggests that EFT may be efficacious because it aims to evoke maladaptive negative emotions rooted in maltreatment such as dejection, shame, fear, terror, and guilt, and transform them into positive and adaptive emotional responses such as compassion, confidence, empathy, connection, and assertiveness. Helping adults transform the negative, maladaptive emotions in adaptive responses could allow adults to have more supportive and less stressful relationships Further, if adults remain in relationship with the perpetrator (i.e. parent), adults can have a clearer picture of whether the relationship should be worked on (Diamond et al., 2016). Dalton et al., (2013) discuss several interventions that may be particularly helpful in alleviating mental

health symptoms in the context of couple's therapy. Specifically, they suggest that imaginary confrontation and experiencing the emotions rooted in the maltreatment facilitate reprocessing, alleviating mental health symptoms, and may alter perceptions and attributions of adult's relationships (Dalton et al., 2013).

Another way MFTs can help clients, particularly couples, is by track patterns of interaction between partners. Often times, couples get trapped in negative cycles of interaction (Johnson 2002), which can include anger, contempt, and defensiveness and these dynamics are particularly salient in maltreated adult's relationships (Walker et al., 2011). MFTs can help adults identify those negative cycles of interaction and provide coaching and guidance to move into positive, emotionally supportive cycles of interaction (Johnson 2002). This can be done by helping adults voice their needs in their relationships, recognize their own cues for needing support, acknowledge their partners' experiences and needs, identify any maltreatment related blockades (i.e. negative internal working models), and have partners share how their history of abuse and neglect has affected them.

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Strine, T. W., Chapman, D. P., Balluz, L., & Mokdad, A. H. (2008). Health-related quality of life and health behaviors by social and emotional support. *Social Psychiatry and Psychiatric Epidemiology, 43*, 151-159.

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Walker, E. A., Unutzer, J., Rutter, C., Gelfand, A., Saunders, K., VonKorff, M., ... & Katon, W. (1999). Costs of health care use by women HMO members with a history of childhood abuse and neglect. Archives of *General Psychiatry, 56*, 609-613.

Walker, E. C., Holman, T. B., & Busby, D. M. (2009). Childhood sexual abuse, other childhood factors, and pathways to survivors' adult relationship quality. *Journal of Family Violence, 24,* 397-406.

Waters, E., Merrick, S., Treboux, D., Crowell, J., & Albersheim, L. (2000). Attachment security in infancy and early adulthood: A twenty-year longitudinal study. *Child Development, 71*, 684-689.

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Whisman, M. A., & Bruce, M. L. (1999). Marital dissatisfaction and incidence of major depressive episode in a community sample. *Journal of Abnormal Psychology, 108*, 674-678.

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Whitton, S. W., & Whisman, M. A. (2010). Relationship satisfaction instability and depression. *Journal of Family Psychology, 24*, 791-794.

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Williams, N. L., & Riskind, J. H. (2004). Adult romantic attachment and cognitive vulnerabilities to anxiety and depression: Examining the interpersonal basis of vulnerability models. *Journal of Cognitive Psychotherapy, 18*, 7-24.

Zaider, T. I., Heimberg, R. G., & Iida, M. (2010). Anxiety disorders and intimate relationships: A study of daily processes in couples. *Journal of Abnormal Psychology, 119*, 163-173.

BIOGRAPHICAL SKETCH

Curriculum Vitae
Michael Fitzgerald

Academic Appointments

2019- Instructor, Child and Family Sciences, University of Southern Mississippi, Hattiesburg Mississippi.

Education

2015- Ph.D., Marriage and Family Therapy. The Florida State University, Tallahassee, FL.

2013-2015 M.A., Marriage and Family Therapy. Syracuse University, Syracuse NY.

2008-2013 B.S., Psychology. Oklahoma State University, Stillwater OK.

Professional Experience

Research

2017 Graduate Research Assistant, Dr. Joe Grzywacz. Florida State University (1 Semester)*

2015-2017 Graduate Research Team Member, Dr. Kendal Holtrop. Florida State University (5 Semesters).

2015-2016 Graduate Research Team Member. Dr. Frank Fincham. Florida State University (3 Semesters).

2011-2012 Undergraduate Research Assistant. Dr. DeMond Grant, Oklahoma State University (5 Semesters).^

2012 Undergraduate Research Assistant. Dr. Melissa Burkley, Oklahoma State University (2 Semesters).

*Denotes graduate assistantship.
^Denotes undergraduate course credit.
All other activity is volunteer based.

Teaching

2019 Guest Lecture, Lewis and Clark College, Marriage and Family Therapy Program. Internal Family Systems Therapy

2019- Instructor, University of Southern Mississippi
FAM 615: Gender and Culture (School Counseling; Graduate) (Online)

FAM 655: MFT Theories I: Survey of Major Models (Marriage and Family Therapy; Graduate)
FAM 655: MFT Theories I: Survey of Major Models (School Counseling; Graduate) (Online)
FAM 151: Interpersonal Communications (Undergraduate)

2015-2019 Graduate Teaching Assistant, The Florida State University.
Teaching Assistant:
FAD 3343 (2 times): Contexts of Adult Development and Ageing (Online)*
CHD 2220: Child Growth and Development (Online)*
CHD 2220 (2 Times): Child Growth and Development (In-person)*
FAD 2230 (3 Times): Family Relationships Across the Lifespan (Online)*

Instructor of Record:
Spring 2018: FAD 2230: Family Relationships Across the Lifespan (In-Person, *n*=186). Supervisor: Dr. Jenna Scott*
Fall 2018: FAD 2230: Family Relationships Across the Lifespan (In-Person, *n*=76). Supervisor: Dr. Jenna Scott*
Spring 2019: FAD 2230: Family Relationships Across the Lifespan (Online, *n*=180).*

2017 Guest Lecturer, The Florida State University.
Courses:
Child Maltreatment: Outcomes, Mechanisms and Recovery. *FAD 3432*: Stress and Resilience.
Child Maltreatment: Outcomes, Mechanisms and Recovery: *FAD 3432* Stress and Resilience. Florida State University
Domestic Violence, IPV and Sexual Assault: *FAD 3432* Stress and Resilience. Florida State University.

2015 Guest Lecturer, Syracuse University
Courses:
Internal Family Systems Therapy. *MFT 682*: Marriage and Family Therapy Theory and Techniques. Syracuse University.

2012 Undergraduate Teaching Assistant^. Supervisor: Dr. William Hargett, Oklahoma State University (2 Semesters)
Responsibilities: Proctoring and grading tests for 4 classes.

Clinical Practice and Supervision (All Supervisors are either AAMFT approved or a candidate)

2018- Internal Family Systems (IFS) consultation group for Eating Disorders. Facilitator: Mary Kruger, M.S., LMFT, IFS Lead Trainer.

2017-2019 — Doctoral Intern and Independent Contractor, Better Living Solutions. Marriage and Family Therapy. Provided individual, couple, family, and group psychotherapy in an intensive outpatient eating disorder treatment facility.

2017- 2019 — Eye Movement Desensitization and Reprocessing (EMDR) supervision group. Facilitator: Chris Inger, PhD, LMFT, EMDR Approved Facilitator

2015-2017 — Center for Couple and Family Therapy: Marriage and Family Therapy Doctoral Intern at Florida State University. Provided individual, couple, and family psychotherapy to diverse clientele at an on-campus, university clinic setting.

2014-2015 — Alkira Family Therapy: Marriage and Family Therapy Intern Provided individual, couple, and family psychotherapy to diverse clientele in a private practice setting.

2014-2015 — Brownell Behavioral Center: Marriage and Family Therapy Intern. Provided Psychotherapy to diverse clientele in a non-profit, collaborative care setting.

2014-2015 — Marriage and Family Therapy Clinic: Marriage and Family Therapy Intern at Syracuse University. Provided individual, couple, and family psychotherapy to diverse clientele at an on-campus, university clinic setting.

Supervision

2016 — AAMFT Clinical Supervisor (in training). Provided supervision to Florida State doctoral students in group and individual formats. AAMFT Approved Supervisor Candidate.

2020 — AAMFT Clinical Supervisor (in training). Provided supervision to Southern Mississippi masters students in group and individual formats.

Other Clinical/Supervision Experience

Internal Family Systems Program Assistant (PA)

2018 — Internal Family Systems Level 1 Training Basic Skills (465), Retreat Style: 2, five-day training sessions in Brooklyn, NY.

2018 — Internal Family Systems Level 1 Training Basic Skills (480), Retreat Style: 1, six-day training session in Sydney, Australia

2019 — Internal Family Systems Level 1 Training Basic Skills (484), Retreat Style: 2 five-day training sessions in Austin, TX and Danville, CA.

2019	Internal Family Systems Level 2: IFS, Trauma, and Neuroscience (514). 1, five-day training session in San Francisco, California.
2019	Internal Family Systems Level 2; Deepening and Expanding (503), five-day training session in New York, New York.
2020	Internal Family Systems Level 2; IFS, Additions, and Eating Disorders, five-day training session in Nashville, Tennessee.
2020	Internal Family Systems Level 2: IFS, Trauma, and Neuroscience (515). 1, five-day training session in Asheville, North Carolina.

Program Assistant Responsibilities: Small group didactic instruction and demonstration, supervise practice group sessions, provide feedback to participants, attend staff meetings and help lead trainer(s) and assistant trainer with the functioning of the training

Certifications, Trainings, and Licenses
Certificate in Traumatic Stress through the Trauma Center at Justice Resource Institute (2016)
Eye Movement Desensitization and Reprocessing: Basic Training (2017), Tampa, Florida.
Internal Family Systems Level 1 Training: Basic Training (2016-2017), Charlotte, North Carolina.
Internal Family Systems Level 2 Training: IFS, Trauma, and Neuroscience (2017), Chicago, Illinois.
Internal Family Systems Level 2 Training: IFS with Addictions and Eating Disorders (2018), Santa Cruz, California.
Internal Family Systems Level 3 Training: Advanced Retreat led by Richard Schwartz, PhD (2018), Del Ray Beach, Florida.
Registered Marriage and Family Therapy Intern (Florida). License Number: IMT 2806
AAMFT Supervisor Candidate

Other Professional Trainings and Workshops
Internal Family Systems: Healing Trauma Workshop (2014)
Certificate in Trauma Focused Cognitive Behavioral Therapy, through the Medical University of South Carolina (2015)
Emotion Focused Therapy Training (2017)
Working with Dissociation and Complex Trauma as an EMDR Therapist (2018)
EMDR Facilitated by Internal Family Systems: Overview and Interventions (2018)
EMDR Therapy Preparation for Adults with Attachment Trauma (2018)
Integrating EMDR Family Therapy Model for Treating Children with Attachment Trauma (2018)

Research Interests:
Primary Interests: Relational and mental health outcomes of childhood maltreatment and intimate partner violence; childhood maltreatment and romantic relationships, intergenerational transmission of maltreatment/trauma; Internal Family Systems.

Secondary and Emerging Interests: Parenting; Childhood Maltreatment on Physical Health, Juvenile/Criminal Justice Involvement, and Academic Outcomes

Peer Reviewed Articles

Seibert, G. S., May, R. W., **Fitzgerald, M.,** & Fincham, F. D. (2016). The Relationship Between School Burnout and Diminished Self-Control. *Learning and Individual Differences, 49*, 120-127. doi: 10.1016/j.lindif.2016.05.024
IF: 1.28

May, R. W., Seibert, G. S., Sanchez-Gonzalez, M. A., **Fitzgerald, M.**, & Fincham, F. D. (2016). Dispositional Self-Control: Relationships with Aerobic Capacity and Morning Surge in Blood Pressure. *Stress*, *20*, 46-52. doi: 10.1080/10253890.2016.1260543. IF: 2.715

Cooper, A., Seibert, G. S., May, R. W., **Fitzgerald, M.**, Fincham, F. D. (2017). School Burnout and Interpersonal Violence: The Role of Self-Control. *Personality and Individual Differences, 112, 18-25*. doi: 10.1016/j.paid.2017.02.047 IF: 1.946;

Lancaster, M., Jackson, L., Youngberg, S., **Fitzgerald, M**., McWey, L. (2018). Peer Relationships, Harsh Parenting and Adolescent Mental Health Concerns. *Journal of Aggression, Maltreatment & Trauma*, *27*, 1060-1074 doi: 10.1080/10926771.2018.1425789. IF: N/A

Tripodi, S., Pettus-Davis, C., Bender, K., **Fitzgerald, M.,** Renn, T., Kennedy, S. (2019). Pathways to Recidivism for Women Released from Prison: The Influence of Childhood Trauma, Mental Health Problems and Substance Abuse. *Criminal Justice and Behavior, 46*, 1219-1236. doi: 10.1177/0093854819867119 IF: 2.168

Fitzgerald, M., Ledermann, T (In Press). Longitudinal Study of Adolescent Abuse, Relationship Quality, and Post-Traumatic Stress Symptoms in Mother-Adolescent Dyads. *Journal of Marital and Family Therapy*. IF: 1.984. doi: 10.1111/JMFT.12420

Fitzgerald, M., Hamstra, C.* Ledermann, T (Accepted with Minor Revisions). Childhood Maltreatment and Emotional Support with Family, Friends and Romantic Partners in Adulthood: An Examination of Gender Differences. *Child Abuse and Neglect.* IF: 2.889

Fitzgerald, M., London Johnson, A., Gallus, K (Accepted with Minor Revisions). Intergenerational Transmission of Trauma and Family Systems Theory: An Empirical Investigation. *Journal of Family Therapy.* IF: 1.066

Revise and Resubmit

Fitzgerald, M., Ledermann, T., Grzywacz, J., Hamstra, C.* Childhood Abuse and Positive and Negative Relationship Quality: The Role of Depression. *Journal of Relationships Research* IF: N/A.

Under Review

Fitzgerald, M. Does a Meditative Practice Moderate the Relationship Between Child Maltreatment and Adult Men and Women's Mental Health Problems? *Psychological Trauma: Practice, Research, and Policy*. IF: 2.529

Fitzgerald, M., Spuhler, B., Hamstra, C*. The Intersection of Childhood Maltreatment and Marriages: Implications for Adult's Health. *Journal of Family Issues* IF: 1.607

Fitzgerald, M. Sims, P. A Systematic Review of Childhood Sexual Abuse and Relationship Quality in Adulthood. *Journal of Marital and Family Therapy*. IF: 1.984.

In Preparation (Statistical Analysis is Completed If Applicable)

Fitzgerald, M. Developmental Pathways from Childhood Abuse to Young Adult Romantic Relationships Functioning. *Development and Psychopathology*. IF: 3.593

Fitzgerald, M. Social Support as a Mechanism Linking Childhood Maltreatment and Adult's Depressive and Social Anxiety Symptoms. *Family Relations*

Fitzgerald, M. A Dyadic Investigation into Maternal and Adolescent Depression and Relationship Quality: Implications for Maternal and Adolescent Aggression. *Family Process*

Fitzgerald, M., Grames, H. Childhood Maltreatment and Mindfulness: Implications for Older Adult's Marital Outcomes. *Journal of Gerontology Series B*. IF: 3.418

Fitzgerald, M., Wright, L. Relational Pathways from Childhood Emotional Abuse to Adult's Mental Health Functioning: A Stratified Analysis of Three Cohorts. *Journal of Gerontology Series B*. IF: 3.418

Fitzgerald, M., Spuhler, B., Ledermann, T. Partner and Familial Support and Strain in Adults with and Without Childhood Emotional and Physical Abuse: Understanding the Cross-Buffering Effects on Affective Symptoms. *Journal of Social and Personal Relationships*. IF: 1.678

Fitzgerald, M., Youngberg, S., Ledermann, T., Grzywacz, J. Marital Quality Links Childhood Abuse to Mental Health Problems.

Hamstra, C*., **Fitzgerald, M.** Longitudinal Effects from Childhood Emotional Abuse to Bullying Perpetration in Adolescents: The Role of Mental Health and Social Problems. *Development and Psychopathology*. IF: 3.593

Fitzgerald, M. Childhood Maltreatment and Adult's Family Functioning: The Role of Socially Anxious and Depressive Symptoms.

London Johnson, A., **Fitzgerald, M.** Adult Attachment and Physical and Psychological Dating Violence in College Students: The Role of Fathering. *Journal of Interpersonal Violence*: 3.064

Fitzgerald, M. Sims, P. Ledermann, T. Do Changes in the Non-Offending Mother-Adolescent Relationship from Early to Middle Adolescence Moderate the Relationship Between Sexual Abuse and Posttraumatic Stress Symptoms? *Child Maltreatment*

In Progress

Fitzgerald, M. Childhood Maltreatment and Relationship Quality: A Literature Review. *Trauma, Abuse, & Violence.* IF: 4.329

Fitzgerald, M., Epslin, J., Wright, L., Gallus, K., Hardy, N. Stress, Family Functioning, and Parent-Adolescent Relationship Quality as Pathways from Maternal Childhood Abuse to Adolescent Psychopathology. *Development and Psychopathology*. IF: 3.593

Fitzgerald, M., Berthaiume, K., London Johnson, A., Love, H., Ledermann, T. The Parent-Adolescent Relationship and Behaviors: A Dyadic Analysis of Change. *Journal of Research on Adolescence*. IF: 2.071

Poster Presentations

Hamstra, C.,* **Fitzgerald, M** (2019, August)**.** Pathways from Psychological Abuse to Educational Outcomes. Poster presented at 79th Annual American Association of Marriage and Family Therapy (AAMFT), Austin, Texas.

Fitzgerald, M. (2019, August). Child Maltreatment and the Relation with Friends, Family and Spouses. Poster presented at 79th Annual American Association of Marriage and Family Therapy (AAMFT), Austin, Texas.

Fitzgerald, M., Ledermann, T., Grzywacz, J., Hamstra, C.* (2019, August). Abuse, Depression and Relationship Quality in At-Risk Women. Poster presented at 79th Annual American Association of Marriage and Family Therapy (AAMFT), Austin, Texas.

Berthaiume, K., **Fitzgerald, M.,** Fincham, F. (2019, March). The Influence of Implicit Theories of Intelligence on Children's Goal Orientation and View of Failure. Poster presented at Society for Research in Child Development (SRCD). Baltimore, Maryland.

London Johnson, A., **Fitzgerald, M.** (2018, November). Pathways Impacting Fathers' Behaviors on College Students' Dating Violence. Poster presented at National Counsel on Family Relations (NCFR). San Diego, California.

Fitzgerald, M., Youngberg, S., Ledermann, T., Grzywacz, J. (2018, November). Redefining Marital Quality: Revisiting Conceptual Roots. Poster presented at National Counsel on Family Relations (NCFR). San Diego, California.

Jackson, L., **Fitzgerald, M.,** Lancaster, M., Call, T., McWey, L. (2018, November). Adolescent Neglect, Educational Outcomes and Self-Concept. Poster presented at 78th Annual American Association of Marriage and Family Therapy (AAMFT). Louisville, Kentucky.

Fitzgerald, M., Ledermann, T. (2018, November). Trauma, Dyadic Attachment and Trauma Symptoms in Adolescence. Poster presented at 78th Annual American Association of Marriage and Family Therapy (AAMFT). Louisville, Kentucky.

Fitzgerald, M., Gallus, K (2018, November). Couple Factors, Transmission of Trauma and Child Outcomes. Poster presented at 78th Annual American Association of Marriage and Family Therapy (AAMFT). Louisville, Kentucky.

Lancaster, M., Youngberg, S., Jackson, L., **Fitzgerald, M.,** McWey, L. (2017). Peer Relationships, Harsh Parenting and Adolescent Mental Health Concerns. Poster presented at National Counsel on Family Relations (NCFR). Orlando, Florida.

Fitzgerald, M., Allen, J. W., Seibert, G. S., May, R.W., Fincham. F. D. (2016, September). The Relationship between IPV, self-control, and school burnout. Poster presented at 76th Annual American Association of Marriage and Family Therapy (AAMFT). Indianapolis, Indiana.

Murray, K., Godfrey, K., **Fitzgerald, M**., Holtrop, K. (2016, September). Parenting factors and risky behavior in gifted college students. Poster presented at 76th Annual American Association of Marriage and Family Therapy (AAMFT). Indianapolis, Indiana.

Armstrong, J., Murray, K., **Fitzgerald, M**., Holtrop, K., Godfrey, K., Friar, E.* (2016, July). Parenting styles effects on alcohol use in gifted college students. Florida Alliance Health Diversity Scholars Program. Gainesville, Florida.

Fitzgerald, M., May R. W., Seibert, G. S., Sanchez-Gonzalez, M. A., Fincham, F. D. (2016, May). Morning Surge in Blood Pressure and the Role of Self-Control. Poster presented at 28th Annual Convention of the Association for Psychological Science. Chicago, Illinois.

Friar, E.,* Murray, K., Godfrey, K., **Fitzgerald, M**., Armstrong, J., Holtrop, K. (2016, March). Investigating Relationships among Parenting Practices, Social Competence, and Risky Behaviors in Gifted College Students. Poster presented at Florida State University UROP Research Symposium, Tallahassee Florida.

Seibert, G. S., May, R. W., **Fitzgerald, M.**, & Fincham, F. D. (2016, February). School burnout and academic performance: The role of self-control. Poster session presented at Florida State University College of Human Science's Research and Creativity Day. Tallahassee, Florida.

Fitzgerald, M., Calvert, C., Williams, D., Lechner, W. V., Mills, A. C., Judah, M. R., & Grant, D. M. (2012, September). Physiological responding to cognitive processes associated with anxiety disorders. Poster presented at the Annual Oklahoma Psychological Association Student Society Conference. Tulsa, Oklahoma.

* Denotes undergraduate student collaborator

Workshops

Booth, F., Agate, J., Allington-Goldfain, K., Cox, K., Earnest, K., **Fitzgerald, M.,** Gaffney, J., Seiler, S., Tyson, J (2019) Direct Access: An Essential IFS Skill. Internal Family Systems Conference. Denver, Colorado

Morgan, A., **Fitzgerald, M.** (2019), Family Therapy After Parental Incarceration. 1 Hour workshop presented at 78th Annual American Association of Marriage and Family Therapy (AAMFT). Austin, Texas.

Fitzgerald, M., Wonder, N. (2019). An Introduction to Internal Family Systems. 7 Hour workshop presented in Tallahassee, Florida

Other Research Involvement

1. Recruited, trained and mentored three undergraduate research assistants for the manuscript "Childhood Maltreatment and Couple's Functioning: A Literature Review"
2. Possession and experience working with the following national/large scale data sets:
    a. Longitudinal Studies of Childhood Abuse and Neglect (LONGSCAN)
    b. Midlife Development in the United States (MIDUS)
3. Research supervisor to undergraduate students (and their current positions / terminal degree)
    a. Haley Feener: Graduate Student, Florida State University Masters of Social Work Program
    b. Claire Derricks: Graduate Student, Syracuse University Masters of Marriage and Family Therapy Program
    c. Cailyn Hamstra: Current Supervisee
4. Research Supervisor to graduate students
    a. Brittany (Rushing) Coker: Graduate Student, University of Southern Mississippi

Scholarships, Awards, and Prizes

Travel Award, David B. Falk College of Sport and Human Dynamics, Syracuse University, 2014 ($100)
Ross and Cora Evans Scholarship, Department of Family and Child Sciences, The Florida State University, 2015 ($1200)
GSAC Travel Award, College of Human Sciences, Florida State University, 2016 ($300)
Travel Award, Department of Family and Child Sciences, College of Human Sciences, Florida State University, 2016 ($500)
Scholarship for Internal Family Systems Level 1 Training, Center for Self Leadership, 2016 ($1750)
Scholarship for Internal Family Systems Level 2 Training, Center for Self Leadership, 2017 ($1150): IFS Trauma, and Neuroscience
Scholarship for Internal Family Systems Level 2 Training: IFS with Addictions and Eating Disorders Center for Self Leadership, 2018 ($425)
Scholarship for Internal Family Systems Level 3 Training, Center for Self Leadership, 2018 ($630)

Grants and Fellowships

2020 Family Process New Writers Fellowship

Professional Membership

Student Member American Association for Marriage and Family Therapy (AAMFT)

Florida Division (Tallahassee): 2015-2019
New York Division (Central): 2013-2015
National: 2013-2019

Preclinical Fellow American Association for Marriage and Family Therapy (AAMFT)
National: 2019-Present

National Council on Family Relations (NCFR)
National: 2015-Present

Eye Movement Desensitization and Reprocessing International Association (EMDRIA)
International: 2017-2018

Service

Profession

AAMFT
Conference Volunteer
Milwaukee, 2014
Indianapolis, 2016
Assistant Manager
Louisville, 2018

NCFR
Conference Volunteer
San Diego, 2018

Internal Family Systems
Conference Volunteer
Denver, 2019

Reviewer for Abstracts

AAMFT
Conference Reviewer, 2019
Conference Reviewer, 2020

NCFR
Conference Reviewer, 2019

Reviewer for Referred Journals

2018 Student Reviewer
Journal of Social and Personal Relationships (2018)
Journal of Family Psychology (2018)
Plos One (2018)

2018- Ad Hoc Reviewer (*n* = *7*)
Child Abuse and Neglect

2020- Ad Hoc Reviewer (*n* = 1)
Journal of Relationships Research

University of Southern Mississippi

Tenure Track Assistant Professor Search Committee Member, 2019-2020

Additional Preparation Not Reported Elsewhere

Mplus self-study short courses (48 Hours Total)

- Multilevel Modeling with Cross Sectional Data (6 hours)
- Multilevel Modeling with Longitudinal Data (6 hours)
- Advanced factor analysis and structural equation modeling with continuous outcomes (6 hours)
- Advanced regression analysis, IRT, factor analysis and structural equation modeling with categorical, censored, and count outcomes (6 hours)
- Introductory and intermediate growth modeling (6 hours)
- Advanced growth modeling, missing data analysis, and survival analysis (6 hours)
- Categorical latent variable modeling with cross-sectional data (6 hours)
- Categorical latent variable modeling with longitudinal data (6 hours)