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Tolerance of Infant Distress Among Working Parents: Examining the Roles of Attachment Anxiety and Work–Family Conflict

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SYNOPSIS

Objective. Working parents of young children often face work–family conflict, but little is known about the impact of this stressor on distress tolerance in the parenting role. We examined whether work–family conflict is associated with heightened work–family guilt and reduced infant distress tolerance, and we tested whether these effects are strongest among parents high in attachment anxiety. **Design.** In an experimental study of 233 parents of children ages 1–3 years, parents first reported their attachment anxiety, then were randomly assigned to read a vignette depicting a subtype of work–family conflict—work-interfering-with-family (WIF) conflict—or to an attention control condition. Finally, parents reported their feelings of WIF-guilt and completed an infant distress tolerance paradigm. **Results.** Attachment anxiety predicted greater WIF-guilt and less distress tolerance cry task persistence and moderated associations between experimental condition and outcomes: Parents with low attachment anxiety reported less WIF-guilt when primed with WIF-conflict than parents with average or high attachment anxiety, and parents with high attachment anxiety displayed less distress tolerance when primed compared to parents with low or average attachment anxiety. **Conclusions.** Working parents with low attachment anxiety may fare better emotionally in the face of WIF-conflict than their peers with higher attachment anxiety. High attachment anxiety may represent a risk factor for the negative effects of WIF-conflict on distress tolerance in response to infant crying. Future work should explore interventions to support working parents with high attachment anxiety.

INTRODUCTION

The transition to parenthood is rife with unfamiliar challenges, as parents cope with sleep deprivation, redefine their social lives, and learn to meet their infants' needs (Bost, Cox, Burchinal, & Payne, 2002; Medina, Lederhos, & Lillis, 2009; Nelson, Kushlev, & Lyubomirsky, 2014). For those who are employed, this transition may be even more complex. Specifically, as parents juggle their dual roles in the family and in the workplace, they often encounter *work–family conflict* (Byron, 2005). When the requirements of work and family are incompatible, parents may experience a host of negative emotions and struggle to respond sensitively to their children (e.g., MacEwen & Barling, 1991). However, extant studies of work–family conflict and parenting have almost exclusively relied on self-reports of caregiving. Recent developments in the study of parenting behavior, such as the advent of controlled laboratory stressors to examine parents' behavioral responses to hypothetical or simulated parenting situations (e.g., inconsolable infant paradigms; Rutherford, Goldberg, Luyten, Bridgett, & Mayes, 2013), enable a closer and more controlled examination of parenting. Additionally, little is known about what confers risk for experiencing distress following

work–family conflict. In the current study we ask: Are all parents equally susceptible to negative outcomes following conflict between work and family life, or are some parents more vulnerable than others?

In the present research, we assess the extent to which an experimental manipulation of work–family conflict contributes to elevated self-reported guilt and decreased distress tolerance in response to an inconsolable infant. We also examine whether attachment anxiety, a well-documented risk factor for other types of parenting-related distress (e.g., Selcuk et al., 2010), poses risk for negative emotional and behavioral reactions to work–family conflict.

Work–Family Conflict and Parenting Emotion and Behavior

For many new parents, navigating the balance between work and family life presents significant challenges. Work–family conflict occurs when the demands of one’s work and home lives compete or when effort or stress in one domain inhibits the ability to perform in another domain (Frone, 2003; Michel, Kotrba, Mitchelson, Clark, & Baltes, 2011). Work–family conflict can take two main forms: family-interfering-with-work (FIW) and work-interfering-with-family (WIF) conflict (Greenhaus & Beutell, 1985). When family responsibilities impinge on duties at work (e.g., a mother who needs to take frequent nursing breaks struggles to keep up during lengthy required work meetings), a parent experiences FIW-conflict. By contrast, when work obligations trade off with one’s role in the family (e.g., a father has a taxing day at work and is less emotionally available for his children), a parent experiences WIF-conflict. Notably, WIF-conflict and FIW-conflict may occur in the context of salaried or hourly wage employment. For example, a salaried parent may feel greater pressure to bring unfinished work home in the evening, thus interfering with family obligations. Conversely, parents who work for hourly wages may have less flexibility in and control over their schedules, which may engender greater WIF-conflict when they are unable to rearrange their schedules to care for a sick child.

Although both FIW- and WIF-conflicts have been linked to self-reported distress and poorer parenting functioning (e.g., Frone, Russell, & Cooper, 1992a; Gali Cinamon, Weisel, & Tzuk, 2007), here, we focus on consequences of WIF-conflict because it is more prevalent than FIW-conflict (Frone, Russell, & Cooper, 1992b). Moreover, WIF-conflict is thought to have stronger, more direct consequences for parents’ emotion and behavior at home than FIW-conflict (Frone et al., 1992a).

WIF-conflict is related to maladjustment across multiple domains of psychosocial functioning, including fatigue and emotional exhaustion (Jansen, Kant, Kristensen, & Nijhuis, 2003; Senécal, Vallerand, & Guay, 2001), decreased lower romantic relationship quality (Cooklin et al., 2015), and lower job and life satisfaction (Allen, Herst, Bruck, & Sutton, 2000). Recent work regarding the nuances of work–family conflict has focused on its correlates with specific emotional reactions, including hostility and guilt (Judge, Ilies, & Scott, 2006; Livingston & Judge, 2008). Guilt is defined as a “moral emotion” which is experienced in response to perceived wrongdoing (Eisenberg, 2000; Harris, 2003). In turn, guilt in general is implicated in the pathology of multiple disorders, including anxiety (Shapiro & Evelyn Stewart, 2011) and depression (Ghatavi, Nicolson, MacDonald, Osher, & Levitt, 2002), and thus may threaten an individual’s well-being when experienced frequently.

In the context of working families, parents may experience *work-family guilt* when they feel at fault for difficulties related to work-family conflict (regardless of actual blame), with potentially harmful consequences for psychological health and functioning at home and at work (Borelli, Nelson, River, Birken, & Moss-Racusin, 2017). Work-family guilt may be promoted by societal norms that contribute to backlash for working parents in both domains. Parents (particularly mothers) who work are often judged as less competent in the workplace (Fuegen, Biernat, Haines, & Deaux, 2004) and are judged as less nurturing and committed to their families (Etaugh & Folger, 1998). Over time, parents may internalize these judgments and experience FIW-guilt (arising in response to FIW-conflict) or WIF-guilt (occurring in response to WIF-conflict; Korabik, 2015). WIF-guilt is associated with parents' distress, including greater symptoms of depression and anxiety (Borelli, Nelson et al., 2017; Borelli, Nelson-Coffey, River, Birken, & Moss-Racusin, 2017) and can exert negative influence on family life and work life by leading parents to engage in repair behaviors, which may be indicative of permissive parenting (Borelli, Nelson-Coffey et al., 2017; Martínez, Carrasco, Aza, Blanco, & Espinar, 2011).

Consider a father who is late to pick up his child from daycare after meetings at work lasted longer than anticipated; the father then needs to bring the child to the grocery store to pick up food for dinner. While at the grocery store, the child is tired and becomes fussy, throwing a tantrum and demanding candy, cookies, and potato chips. In response to his feelings of guilt about being late, and to "repair" the distress caused by his lateness, the father gives in to these demands, which he typically would not condone (Borelli, Nelson-Coffey et al., 2017). Parenting acts like these are permissive of the child's misbehavior in the sense that they involve bending to the child's wishes despite the fact that doing so violates a parent's internal values for parenting and can contribute to future child behavior problems (Querido, Warner, & Eyberg, 2002). WIF-guilt can also negatively affect parents' work lives through repair behaviors, for example, when a mother reduces her work hours or quits work altogether due to guilt over children's sadness when she leaves for the day (Martínez et al., 2011).

Although multiple studies have documented associations between WIF-conflict and WIF-guilt (Borelli, Nelson-Coffey et al., 2017; Livingston & Judge, 2008; Shaw & Burns, 1993), most are correlational. Studies employing experimental inductions of work-family conflict are needed to begin to investigate whether work-family conflict induces work-family guilt (Korabik, 2015). Thus, one goal of the current investigation is to examine whether exposure to work-family conflict is associated with heightened work-family guilt.

WIF-conflict may itself have a bearing on adjustment and sensitivity in parenting. When work intrudes on family responsibilities, both quality of parenting behavior and parents' feelings about themselves as parents may suffer. Work-related stress is associated with mothers being more emotionally and behaviorally withdrawn from their children (Repetti & Wood, 1997), which could confer negative consequences for children. Indeed, parents' work stress is related to poorer psychological adjustment among their children via increases in parents' feelings of overload and strain as well as parent-child conflict (Crouter & Bumpus, 2001). As parents face an accumulation of stress and guilt related to the clash of their dual roles, they may have depleted emotional resources to aid in tolerating infant distress, which could result in insensitive parenting (Nomaguchi & Milkie, 2006). WIF-conflict is associated with poorer self-reported parenting adjustment, including decreased lower parenting satisfaction and self-efficacy

(Gali Cinamon et al., 2007; Kinnunen & Mauno, 1998); parenting laxness (Borelli, Nelson-Coffey et al., 2017); and lower self-reported parent-child interaction quality, parenting sensitivity, and consistency (Cooklin et al., 2015; Gali Cinamon et al., 2007; MacEwen & Barling, 1991). Little is known about the implications of WIF-conflict for observed parenting behavior; therefore, indices of parenting behavior and experimental data are needed to provide more compelling evidence for this link. Behavioral metrics of parenting are strongly linked to the quality of parent-child relationships and child developmental outcomes (Brumariu & Kerns, 2010; De Wolff & van IJzendoorn, 1997; Sroufe, 2005).

Exploring Potential Risk Factors: Attachment Anxiety

Not every parent who experiences WIF-conflict also reports frequent guilt or negative caregiving behavior, so it is important to identify the parents at greatest risk for the negative sequelae of WIF-conflict. We propose that one potential risk factor is adult attachment anxiety. According to theory, attachment experiences with caregivers in early childhood inform attachment—or one's expectations for and beliefs about close relationships—in adulthood (Bowlby, 1969). Attachment styles evolve over time in response to new relational experiences but reflect primarily stable beliefs and expectations about giving and receiving care in intimate relationships (Collins, Clark, & Shaver, 1996; Hamilton, 2000). Adult attachment can be assessed through a variety of measures, including narratives (i.e., attachment classification and representations), self-report measures (i.e., attachment style), and projective tests (Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010), with narratives and self-report measures most commonly appearing in the literature. Although both narratives and self-report measures have their roots in Bowlby's (1969) attachment theory, the majority of studies exploring parenting have used attachment interviews about childhood experiences rather than self-report of adulthood attachment style (Jones, Cassidy, & Shaver, 2015), representing a significant gap in the literature. Adult attachment style refers to the self-reported pattern of thoughts and emotions with which one approaches close (typically romantic) relationships, with varying degrees of *anxiety* and *avoidance* (Hazan & Shaver, 1987; Shaver & Mikulincer, 2002). Attachment anxiety is reflected in a fear of abandonment and rejection, whereas attachment avoidance is reflected in a discomfort with intimacy and dependence on others.

In large part because of these fears of abandonment, adults with high levels of attachment anxiety are thought to *hyperactivate* the attachment system, displaying hypervigilance for threats, and ruminating and becoming dysregulated in response to stressors (Mikulincer, Shaver, & Pereg, 2003; Shaver & Mikulincer, 2007). In particular, adults with high attachment anxiety respond with fear to relationship challenges or threats (Campbell, Simpson, Boldry, & Kashy, 2005). A growing body of research documents that parents with high attachment anxiety are inclined to report and display greater negative affect in the parenting role (Rholes, Simpson, & Blakely, 1995; River, Borelli, & Nelson-Coffey, 2016), potentially because of their tendency to become dysregulated in response to interpersonal stress, which commonly occurs in the course of parenting. Moreover, some evidence indicates that high attachment anxiety parents may be less sensitive and responsive with their children (Burkhart, Borelli, Rasmussen, Brody, & Sbarra, 2017; Selcuk et al., 2010), including in samples of working parents (River et al., 2016).

Notably, theorists suggest that individuals with anxious attachment experience frequent self-doubt and feelings of worthlessness and helplessness. As a result, anxiously attached individuals may experience a sense of overwhelming shame when they perceive that they have damaged the quality of a close relationship (Mikulincer & Shaver, 2005). Situations amenable to this type of interpretation occur frequently in the lives of working parents, who often struggle to manage the dual responsibilities of work and family. Working parents with high attachment anxiety may blame themselves for the threat that WIF-conflict poses to their relationships with their children, and experience heightened feelings of insecurity, fear, and guilt, which in turn could result in less optimal parenting behavior. Although few studies have investigated attachment anxiety as a risk factor for the consequences of work–family conflict, some evidence suggests that related elements of personality, including neuroticism and negative affect, may amplify perceptions of work–family conflict (Michel et al., 2011). Moreover, Sumer and Knight (2001) found that individuals with preoccupied (anxious) attachments were more likely to report negative spillover from work to family, compared to their secure peers. However, it remains to be seen whether parents high in attachment anxiety demonstrate greater emotional and behavioral reactivity to WIF-conflict.

The Current Investigation

In the current experiment involving working parents of children ages 1–3 years, we examined the effects of WIF-conflict on WIF-guilt and parenting behavior in the form of tolerance of infant distress. We also tested whether parents high in attachment anxiety are particularly vulnerable to the negative emotional and behavioral consequences of WIF-conflict. We focused on families with young children because for these parents, balancing work and parenting may be a newer, and perhaps more salient and challenging, task (Costigan, Cox, & Cauce, 2003). Work–family balance is also particularly difficult during this developmental period because children are not yet in school all day, but most parents no longer receive parental leave from work.

We elected to examine parenting behavior in response to child distress—more specifically, to the experience of infant crying—for several reasons. According to attachment theory, sensitive responsiveness to child distress is critical for infants' attachment security with their parents and has long-lasting impacts on children's well-being (McElwain & Booth-LaForce, 2006; Sroufe, 2005). However, to behave sensitively, parents must be able to withstand stress in the parenting role. Studies of parental responses to distress find that infants' cries are evocative stimuli for parents of young children, with the potential to elicit strong, varied neural and behavioral reactions (Kim, Strathearn, & Swain, 2016; Rigo et al., 2016; Seifritz et al., 2003). Parents may experience a wide array of emotions in response to infant crying, including empathy, irritation, distress, helplessness, and anxiety (Dix, 1991; Esposito, Nakazawa, Venuti, & Bornstein, 2015; Out, Pieper, Bakermans-Kranenburg, Zeskind, & van IJzendoorn, 2010). When parents experience greater negative emotion or aversion in response to infant crying, they are more likely to behave insensitively by responding harshly or punitively or by withdrawing and minimizing children's negative emotions (Barr, Trent, & Cross, 2006; Del Vecchio, Walter, & O'Leary, 2009; Frodi, 1985; Leerkes, 2010; Leerkes, Parade, & Gudmundson, 2011).

Given the significance of sensitive responding to distress for child development, it is important to identify predictors of different parental responses to infant distress. To do

so, numerous studies have utilized laboratory stressor tasks in which parents are instructed to listen to and/or watch an infant cry and afterwards report on their feelings and the actions they would take in response to the child (e.g., Leerkes, 2010), while others have utilized crying baby simulator dolls to rate sensitive responsiveness to the doll or measure persistence in soothing the doll (i.e., distress tolerance; Rutherford et al., 2013). These studies reveal, for example, that parents facing socioeconomic disadvantage show reduced neural responses to infant cry sounds (Kim, Capistrano, & Congleton, 2016), and parents with lower abilities to reflect on their children's mental states are likely to persist for less time in soothing a crying doll (Rutherford et al., 2013).

No research to date has examined parents' responses to infants' cries as a function of their experience of WIF-conflict. However, studies of work-family conflict and self-reported parenting behavior suggest that, when parents encounter WIF-conflict, they may experience greater negative affect, which can spillover into their behavior as parents. Scholars theorize that when working parents of toddlers experience greater stress and guilt about work-family conflict, they may be more likely to behave permissively with their children in an effort to avoid additional frustration and conflict in the family (Martínez et al., 2011; Nomaguchi & Milkie, 2006). Borelli, Nelson-Coffey et al. (2017) found that, during a simulated work-family conflict scenario, parents experiencing high WIF-guilt were more likely to choose a permissive response to their toddler's tantrum (e.g., giving in to the child's demand for candy). Higher WIF-guilt was also associated with greater self-reported laxness in parenting (Borelli, Nelson-Coffey et al., 2017). If parents facing guilt related to WIF-conflict are motivated to avoid distress within the family, then WIF-conflict may reduce parents' tolerance of child distress, resulting in faster withdrawal from the distressed child. Thus, in the context of an infant cry paradigm, we anticipated that parents facing WIF-conflict might be overwhelmed by stress and guilt and withdraw from, or persist less in soothing, a crying infant.

Although there is substantial evidence that high attachment anxiety poses risk for greater negative affect in the parenting role and less sensitive responses to children, no research to date has examined the link between parental attachment anxiety and infant distress tolerance. We anticipated that attachment anxiety would be related to lower infant distress tolerance as a result of heightened guilt and shame in response to the interpersonal stress of not being able to soothe the crying child (Mallinckrodt, 2000; Mikulincer & Shaver, 2005). Furthermore, we expected that WIF-conflict would have the most pronounced effect on WIF-guilt and cry task persistence among parents with high attachment anxiety due to their tendency to become emotionally dysregulated in response to relationship threats (Campbell et al., 2005).

Our hypotheses were as follows: First, we hypothesized that a WIF-conflict scenario would be linked to increased WIF-guilt and decreased persistence on an infant distress tolerance task. Second, we anticipated that attachment anxiety would be positively associated with WIF-guilt and negatively associated with distress tolerance task persistence. Third, we expected that increased state guilt during the cry task would mediate the association between attachment anxiety and cry task persistence. Finally, we predicted that attachment anxiety would moderate associations between WIF-conflict priming and greater WIF-guilt and less distress tolerance task persistence, such that the effect of WIF-conflict priming on parenting outcomes would be strongest among parents with high attachment anxiety.

METHOD

Participants

Two hundred thirty parents (52.6% female; $M_{age} = 31.54$, $SD_{age} = 5.43$) responded to an online advertisement for a survey on parenting and emotions on Amazon Mechanical Turk (mTurk), an online marketplace commonly utilized in psychological research, including studies focusing on parenting (Le & Impett, 2016; Nelson, Kushlev, English, Dunn, & Lyubomirsky, 2013; Nelson-Coffey, Borelli, & River, 2017), to recruit reliable, diverse samples (Buhrmester, Kwang, & Gosling, 2011; Gosling, Vazire, Srivastava, & John, 2004).

Parents were eligible for the study if they had at least one child between the ages of 1 and 3 years, but many participants had additional children outside this age range (children's ages ranged from newborn to 18 years old). All participants lived in the United States. On average, eligible parents were primary caregivers for 1.58 children ($SD = .86$). Due to our interest in work-family conflict, participants were only eligible if they reported working 35 hours per week or more ($M_{hrs} = 42.50$, $SD_{hrs} = 5.71$). The ethnic composition of our sample was comparable to the composition of the population of the United States (U.S. Census Bureau, 2016), with 78.3% European American, 9.1% African American, 7.8% Latin American, 4.3% Asian American, and .4% other. Participants reported having a diverse range of occupations, but the most common were management (14.0%), business and financial (11.8%), and computer and mathematical (10.0%) occupations. Most parents in the sample were partnered (married/domestic partnership: 75.2%), middle class (97.0% self-identified as working full-time; 46.1% reported an annual household income of \$60,000 or less), and had a bachelor's (46.2%) or graduate (15.4%) degree (7.2% completed high school, 17.2% some college, 14.0% community college).

Procedure

The study protocol was approved by the Institutional Review Board. Participants were instructed that the survey should be completed on a computer or tablet and could not be completed using a smartphone. Participants reported basic demographic information and then reported their attachment anxiety in romantic relationships and state guilt. Next, they were randomly assigned to read a vignette depicting WIF-conflict or to read a control vignette. Participants then reported WIF-guilt, completed an infant cry paradigm, reported on state guilt again, and answered additional demographic questionnaires, including information about number of children and child ages. Participants received \$2 in compensation through mTurk.

Measures

Attachment Anxiety. Participants completed the Experiences in Close Relationships Scale—Revised (ECR-R; Fraley, Waller, & Brennan, 2000), a highly reliable and valid (Sibley, Fischer, & Liu, 2005) self-report questionnaire composed of two subscales assessing attachment anxiety (e.g., “I often worry that my partner will not want to stay with me.”) and avoidance (e.g., “I don’t feel comfortable opening up to romantic partners.”). The ECR-R includes 36 items that participants rate on a Likert-type scale

from 1 (*strongly disagree*) to 7 (*strongly agree*). We computed averages for the attachment anxiety subscale, with possible scores ranging from 1 to 7 ($M = 2.23$, $SD = 1.36$). Internal consistency in our sample was excellent for anxiety, $\alpha = .96$.

Experimental Manipulation. We designed a vignette that portrayed WIF-conflict (Table 1), modeled to contain themes representing items from existing, validated self-report measures of WIF-conflict: For example, “My work keeps me from my family activities more than I would like.” and “Due to work-related duties, I have to make changes to my plans for family activities” (Carlson, Kacmar, & Williams, 2000; Netemeyer, Boles, & McMurrian, 1996). To increase ecological validity, we also matched the vignette to anecdotal accounts of work–family conflict obtained from parenting blogs, parent support groups, and fictional accounts of working parenthood. Participants read a paragraph describing an adult (matched to participant gender) who is the parent of a 2-year-old boy and were randomly assigned to an experimental ($n = 114$) or control condition ($n = 116$). In the experimental WIF-conflict condition, the parent works full-time and misses his/her son’s preschool music class performance because of an important work meeting that ran late. In the control condition, the parent is not depicted as working full-time and misses the recital because he/she has the stomach flu and is not depicted as working full-time. To mask the purpose and to ensure understanding of the vignette, we

TABLE 1
Experimental Manipulation and Control Vignettes

WIF-conflict prime	Control
Sandra/Paul K is 30 years old and lives in Chicago. She is married and is the mother of a 2-year-old boy named Jared. She also works full-time as a financial consultant for a holdings company. Last night, Jared had a performance with his preschool music class (he plays the tambourine) and was so excited for his mom to see him play, but at the last minute Sandra couldn’t make it because she had an important work meeting that ran late.	Sandra/Paul K is 30 years old and lives in Chicago. She is married and is the mother of a 2-year-old boy named Jared. She also enjoys biking alongside Lake Michigan. Last night, Jared was performing with his preschool music class (he plays the tambourine) and was so excited for his mom to see him play, but at the last minute Sandra couldn’t make it because she came down with the stomach flu and was stuck sick in bed.
Comprehension question: What instrument does Jared play?	Comprehension question: What instrument does Jared play?
(A) Violin (B) Tuba (C) Timpani (D) Tambourine	(A) Violin (B) Tuba (C) Timpani (D) Tambourine
Comprehension question: How do you think Jared is feeling?	Comprehension question: How do you think Jared is feeling?
(A) Excited (B) Guilty (C) Embarrassed (D) Disappointed	(A) Excited (B) Guilty (C) Embarrassed (D) Disappointed

asked participants in both conditions two comprehension questions, which all participants answered correctly.

WIF-Guilt. Participants completed the Work-Interfering-with-Family Guilt Scale (WIFGS; Borelli, Nelson-Coffey et al., 2017). The WIFGS contains 20 items, 10 of which assess how often parents experience feelings of responsibility for the actual or potential negative impact of their work on themselves or their family members (e.g., “Feel guilty about being away from your child when you work longer hours than usual”). The other 10 items are interspersed as distractors about other forms of guilt (e.g., “Feel guilty about not keeping in better touch with close friends and family”) and are not included in scoring. Each item is rated on a Likert-type scale from 1 (*never*) to 5 (*always*). Scores are calculated by average and range from 1 to 5. The mean score in our sample was 2.64 ($SD = .68$). The WIFGS shows good convergent, divergent, and predictive validity, and is reliable (Borelli, Nelson-Coffey et al., 2017). The measure demonstrated good reliability in this sample, $\alpha = .80$.

State Guilt. Before and after completing the infant cry task, participants reported on current state guilt, using the guilt subscale of the Positive and Negative Affect Scale-Expanded Form (PANAS-X; Watson & Clark, 1999). The subscale includes six items (i.e., guilty, ashamed, blameworthy, angry at self, disgusted with self, dissatisfied with self), rated on a 5-point Likert-type scale (1 = *very slightly or not at all*, 5 = *extremely*). The subscale demonstrates good test-retest reliability, convergent and divergent validity (Watson & Clark, 1999), and evidenced excellent reliability in this sample, $\alpha_{pre} = .94$ and $\alpha_{post} = .93$. We calculated mean scores and created a change score to reflect feelings of guilt during the cry task, using the standardized residual of post-task guilt when controlling for pre-task guilt.

Infant Cry Task. We developed an online infant cry paradigm for this study, modeled after previously developed tasks for measuring parents’ distress tolerance and sensitivity (Out et al., 2010; Rutherford, Booth, Luyten, Bridgett, & Mayes, 2015; Rutherford et al., 2013; Voorthuis et al., 2013). In the task utilized by Rutherford et al. (2013), parents were left in a room with an infant simulator doll that was programmed to cry inconsolably. The parents were given a set of props (e.g., rattle, bottle, blankets) and instructed to soothe the distressed infant doll as they would a real baby. They were also told that they could stop the task at any time by ringing a bell. They were not told that the experimenter would terminate the interaction after 27 min.

In the current task, parents were instructed to attempt to calm a crying baby displayed on their computer or tablet screen using as many soothing methods as they would like, as they would a real child. The participant looked at a still image of a distressed baby and listened to the sounds of an infant (approximately 6–12 months of age) crying throughout the task. On the bottom of the screen were several icons portraying different soothing techniques, including a bottle, pacifier, blanket, clean diaper, bassinet, and toy bear. We endeavored to present the baby as gender-neutral by using no gendered pronouns and using an image of the baby with ambiguous facial features and a light blue/green onesie. The soothing technique icons were also gender-neutral, with one exception: the bassinet was pink in color.

To attempt a soothing technique, the parent was instructed to drag the icon (e.g., bottle) over to the image of the baby on the screen. Unlike the Rutherford baby

simulator task, parents were instructed that the order in which they attempted different soothing techniques could be important (e.g., bottle-blanket-rocking versus rocking-blanket-bottle). We did so to simulate actual parenting experiences in which infant needs must be satisfied in a certain order as well as to increase the credibility of the task and to promote participant engagement and persistence. Unbeknownst to participants, the infant was actually inconsolable. No information about time was given to participants, but the task was programmed to time out after 10 min. Participants had the option to click a button reading “Unable to Soothe – End Task” at any time. The computer program was designed such that participant data (persistence time; how many times each behavior was attempted and for how long) was automatically recorded. The program uses HTML and CSS for the interface, PHP and JavaScript for the interactivity, and MySQL for the database. The program was hosted on a server at thinkertools.org.

Consistent with prior work (Rutherford, Booth et al., 2015), we indexed distress tolerance by measuring the amount of time spent (in s) trying to soothe the infant (“cry task persistence”). The possible range for persistence ranged from 1 to 600 s, with a mean score in our sample of 85.11 s ($SD = 76.92$ seconds). In a previous, in-person pilot study of the cry task, the mean score for persistence was 199.22 s ($SD = 143.15$ s).

Although this approach to measuring parental distress tolerance is novel, empirical evidence from related paradigms supports its ecological validity. Leerkes (2010) showed that expectant mothers’ responses to video clips of an unfamiliar infant displaying negative emotion were predictive of mothers’ postpartum sensitivity toward their own infants. Specifically, pregnant women’s negative emotions (e.g., “irritated,” “frustrated”) and infant-oriented goals (e.g., “wants to soothe infant”) expressed in response to infant distress in the video predicted coder-rated sensitivity to distress during actual mother-child interaction in the postpartum period (Leerkes, 2010). Previous research has also demonstrated a link between harsh *intended* caregiving responses to the sounds of infant crying on a computer (reported after hearing the crying) and lower coder-rated sensitivity when interacting with a baby simulator (Voorthuis et al., 2013) as well as an association between sensitive parenting behavior toward a baby simulator doll and sensitive parenting behavior toward one’s own child (Bakermans-Kranenburg, Alink, Biro, Voorthuis, & van IJzendoorn, 2015). Lending support for the convergent validity of the paradigm, cry task persistence in this study was positively associated with parents’ scores on the Kansas Parental Satisfaction scale ($r = .27, p < .001$; James et al., 1985) and the Parenting Sense of Competence scale ($r = .21, p = .008$; Johnston & Mash, 1989), which has been associated with self-reported coercive parenting behavior (Bor & Sanders, 2004). Moreover, in a previous validity study of this task, we documented that cry task persistence was predicted by lower pre-task state negative affect ($\beta = -.64, b = -.20, p = .025, \Delta R^2 = .04, p = .025$) and lower pre-task state guilt ($\beta = -.65, b = -.22, p = .015, \Delta R^2 = .05, p = .015$), both assessed with the PANAS-X. We replicated those effects in the current study: Cry task persistence was associated with lower pre-task state negative affect ($\beta = -.58, b = -.23, p = .001, \Delta R^2 = .06, p = .001$) and lower pre-task state guilt ($\beta = -.53, b = -.22, p = .002, \Delta R^2 = .05, p = .002$) on the PANAS-X.

Data Analytic Plan

Before testing our hypotheses, we selected variables to use as covariates and potential moderators in analyses. Four variables emerged based on their theoretical and

empirical associations with WIF-guilt and parenting behavior (Borelli, Nelson-Coffey et al., 2017): parent gender, hours worked each week, number of children, and age of oldest child. We tested each of these four variables as moderators of our analyses. Next, we examined whether and how each of these variables was associated with our dependent variables (WIF-guilt and cry task persistence), and found that weekly hours worked was positively associated with WIF-guilt (Table 2) and that mothers exhibited greater persistence on the cry task than fathers, $t(192) = 2.08$, $p = .039$. Therefore, we included weekly hours worked as a covariate in analyses with WIF-guilt as the dependent variable and parent gender as a covariate in analyses with cry task persistence as the dependent variable.

Prior to data analysis, we examined the distribution of study variables and found that attachment anxiety, cry task persistence, pre- and post-task state guilt, number of children, and age of oldest child variables were positively skewed. We log transformed these variables, which restored the cry task persistence variable to normality and reduced skewness for attachment anxiety, pre- and post-task state guilt, number of children, and oldest child age variables.

We tested our hypotheses with one-way analyses of covariance (ANCOVAs) and hierarchical linear regressions, using Model 1 of the PROCESS macro for SPSS to conduct moderation analyses and Model 4 of the PROCESS macro to conduct mediation analyses (Hayes, 2012). PROCESS assesses significance using 1000 bias-corrected, bootstrapped samples to estimate 95% confidence intervals. The kappa-squared coefficient was calculated without covariates in the model for the mediation analysis, estimating effect size with guidelines from Preacher and Kelley (2011).

RESULTS

Preliminary Analyses

Zero-order correlations indicated that attachment anxiety was positively associated with WIF-guilt, pre-task state guilt, post-task state guilt, and pre- to post-task state guilt change, and negatively associated with cry task persistence and age of oldest child. Pre-

TABLE 2
Correlation Matrix for Key Variables

Variable	1	2	3	4	5	6	7	8	9	10
1 Attachment anxiety	—									
2 WIF-guilt	.41**	—								
3 Cry task persistence	-.16*	-.10	—							
4 Weekly hours worked	.02	.16*	-.03	—						
5 Number of children	-.10	.13	.10	.09	—					
6 Age of oldest child	-.13*	.12	.08	.04	.82**	—				
7 Pre-task state guilt	.59**	.32**	-.22**	.07	-.21**	-.25**	—			
8 Post-task state guilt	.60**	.34**	-.04	.05	-.17*	-.18*	.70**	—		
9 Pre- to post-task state guilt change	.28**	.21**	.12	.38	-.33	-.01	.00	.72**	—	
10 WIF-conflict prime	.06	-.04	-.05	-.05	.06	.04	.07	.01	-.03	—

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

WIF-guilt = Work-interfering-with-family guilt.

WIF-conflict prime condition = 1; control condition = 0.

and post-task state guilt were positively associated with WIF-guilt and negatively associated with number of children and age of oldest child. Pre-task state guilt was also negatively associated with cry task persistence, and pre- to post-task state guilt change was positively associated with WIF-guilt and post-task state guilt (Table 2).

Hypothesis 1a: Does Priming WIF-Conflict Elicit WIF-Guilt?

An ANCOVA controlling for hours worked indicated that WIF-conflict priming did not increase WIF-guilt compared to the control condition, $F(1,227) = .27, p = .60$. There were no interactions between experimental condition and gender, $p = .20$, hours worked, $p = .31$, number of children, $p = .70$, or age of oldest child, $p = .43$, in predicting WIF-guilt.

Hypothesis 1b: Does Priming WIF-Conflict Reduce Cry Task Persistence?

Controlling for gender, a one-way ANCOVA revealed that WIF-conflict priming did not reduce cry task persistence compared to the control condition, $F(1,191) = .35, p = .56$. There were no interactions between condition and gender, $p = .99$, hours worked, $p = .85$, number of children, $p = .28$, or age of oldest child, $p = .66$, in predicting cry task persistence.

Hypothesis 2a: Does Attachment Anxiety Predict Greater WIF-Guilt?

After controlling for hours worked, $R^2 = .03, p = .02$, attachment anxiety predicted greater WIF-guilt, $b = .41, p < .001, \Delta R^2 = .17, p < .001$. There were no interactions between attachment anxiety and gender, $p = .54$, hours worked, $p = .28$, number of children, $p = .17$, and age of oldest child, $p = .28$, in predicting WIF-guilt.

Hypothesis 2b: Does Attachment Anxiety Predict Reduced Cry Task Persistence?

Controlling for parent gender, $R^2 = .02, p = .04$, attachment anxiety predicted reduced cry task persistence, $b = -.16, p = .03, \Delta R^2 = .03, p = .03$. There were no interactions between attachment anxiety and gender, $p = .16$, hours worked, $p = .50$, number of children, $p = .47$, and age of oldest child, $p = .49$, in predicting cry task persistence.

Hypothesis 3: Does Post-Task State Guilt Mediate the Association Between Attachment Anxiety and Cry Task Persistence?

Although the bivariate association between increased state guilt during the cry task and cry task persistence was insignificant, guidelines from Baron and Kenny (1986) indicate that tests of mediation may be justified if the mediator predicts the outcome, when controlling for the independent variable. In a linear regression, controlling for attachment anxiety, $R^2 = .02, p = .04$, increased state guilt during the cry task predicted decreased cry task persistence, $b = .07, p = .01, \Delta R^2 = .03, p = .01$. Therefore, we proceeded to test mediation.

Controlling for parent gender, attachment anxiety predicted increased state guilt during the cry task, $b = 7.63, p < .001, 95\% \text{ CI } [4.5767, 10.6771]$; increased state guilt predicted reduced cry task persistence, $b = .068, p = .01, 95\% \text{ CI } [.0159, .1193]$;

and increased state guilt during the infant cry task mediated the association between attachment anxiety and cry task persistence, $b = .52$, 95% CI [.0645, 1.2106], $\kappa^2 = .07$ (medium effect size). In a model without covariates, increased state guilt also mediated the association between attachment anxiety and cry task persistence, $b = .52$, 95% CI [.0643, 1.2348], $\kappa^2 = .07$ (medium effect size).

Hypothesis 4a: Does Attachment Anxiety Moderate the Association Between WIF-Conflict Priming and WIF-Guilt?

A hierarchical linear regression revealed that attachment anxiety moderated the association between WIF-conflict priming and WIF-guilt, $\Delta R^2 = .02$, $p = .02$ (see Table 3). WIF-conflict priming led to lower levels of WIF-guilt among parents with low attachment anxiety (-1 SD), $b = -.26$, $p = .02$, and there was no association between experimental condition and WIF-guilt among parents with average, $b = -.08$, $p = .30$, or high ($+1$ SD), $b = .10$, $p = .36$, levels of attachment anxiety (Figure 1). Reversal of the independent variable and moderator revealed that attachment anxiety was more strongly positively associated with WIF-guilt, $\Delta R^2 = .02$, $p = .02$, in the WIF-conflict priming condition, $b = 8.25$, $p < .001$, than in the control condition, $b = 4.14$, $p < .001$.

Hypothesis 4b: Does Attachment Anxiety Moderate the Association Between WIF-Conflict Priming and Cry Task Persistence?

A hierarchical linear regression indicated that there was an interaction between WIF-conflict priming and attachment anxiety in predicting cry task persistence, $\Delta R^2 = .03$, $p = .02$ (see Table 3). Parents with high attachment anxiety ($+1$ SD) attempted to soothe the crying infant for a shorter period of time (marginally significant), $b = -.14$, $p = .052$, compared to parents with average, $b = -.02$, $p = .64$, or low (-1 SD), $b = .08$, $p = .22$, levels of attachment anxiety (Figure 1). Similarly, only in the WIF-conflict priming

TABLE 3
Hierarchical Regressions Examining Attachment Anxiety as a Moderator of the Associations between WIF-Conflict Priming and WIF-Guilt and Cry Task Persistence

Dependent variable	WIF-guilt			Cry task persistence		
	<i>b</i>	SE	CI	<i>b</i>	SE	CI
Step 1 R^2	.21***			.08**		
Constant	-2.51	1.38	[-5.22, .20]	1.86*	.82	[.24, 3.49]
WIF-conflict prime	-4.54*	1.92	[-8.33, -.75]	2.73*	1.20	[.37, 5.10]
ECR-R anxiety	4.14***	1.23	[1.72, 6.56]	-.01	.76	[-1.52, 1.49]
Hours worked	.02*	.01	—	—	—	—
Parent gender	—	—	—	-.10	.05	[-.20, .002]
Step 2 R^2 change	.02*			.03*		
WIF-conflict prime X attachment anxiety	4.11*	1.77	[.62, 7.60]	-2.55*	1.11	[-4.73, -.36]

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

WIF-conflict prime condition = 1; control condition = 0.

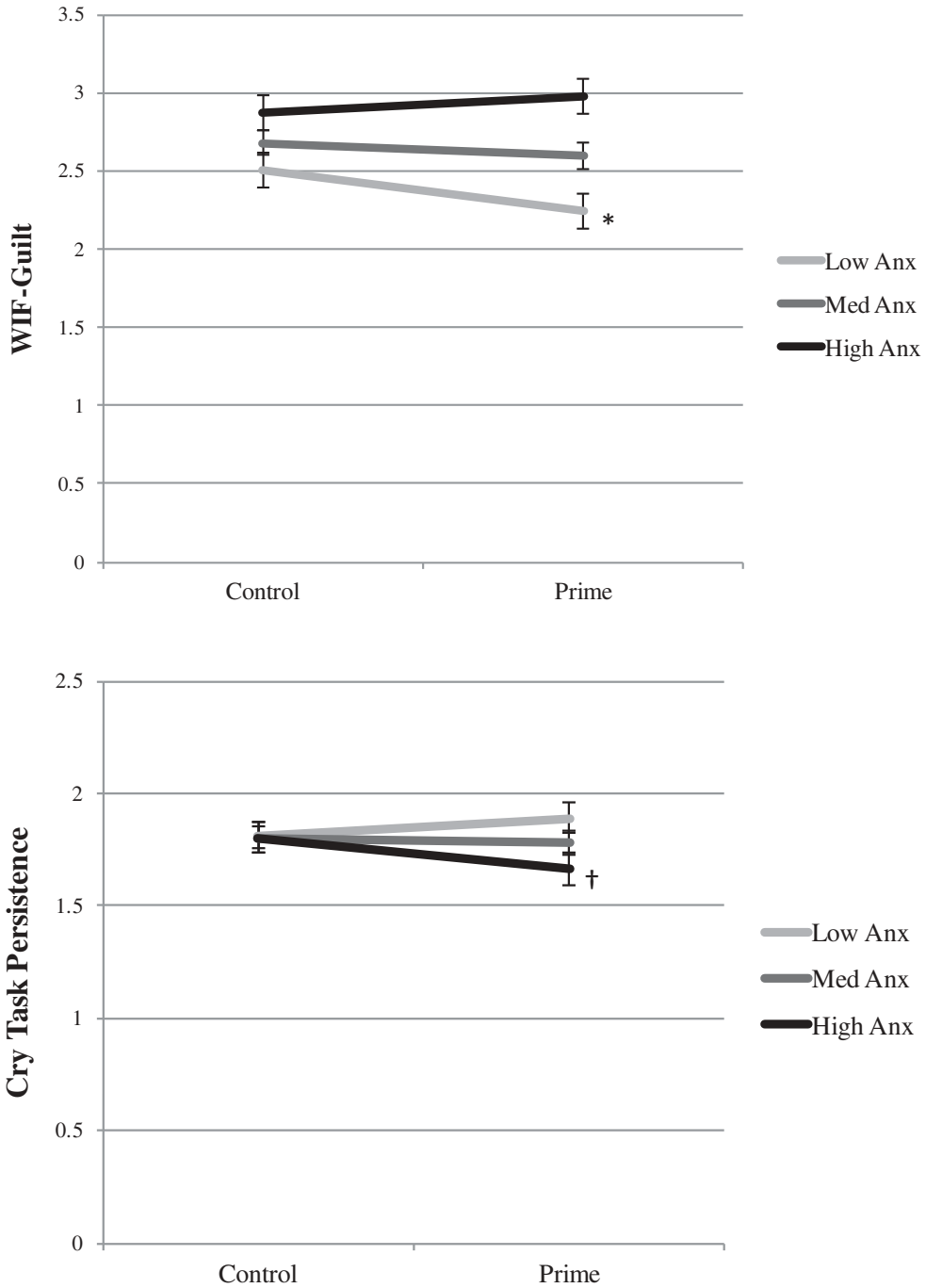


FIGURE 1

Attachment anxiety moderates the associations between WIF-conflict priming and WIF-guilt and infant cry task persistence. The log-transformed cry task persistence variable is depicted in order to display the effects most accurately. *Note.* * $p < .05$, † $p = .052$.

condition, $b = -2.56$, $p = .002$, and not in the control condition, $b = -.01$, $p = .99$, was attachment anxiety negatively associated with task persistence time, $\Delta R^2 = .03$, $p = .02$. There were no three-way interactions between WIF-conflict prime, attachment anxiety, and parent gender, hours worked, number of children, or age of oldest child in predicting WIF-guilt or cry task persistence.

DISCUSSION

In this experimental study, we explored the roles of WIF-conflict and attachment anxiety in predicting parents' WIF-guilt and tolerance of infant distress. WIF-conflict may be most detrimental for parents high in attachment anxiety—potentially leading them to experience greater guilt and display less tolerance for children's distress.

Consistent with our hypotheses, we found that attachment anxiety predicted greater WIF-guilt and less cry task persistence. In addition, increased feelings of guilt during the cry task acted as an indirect effect linking higher attachment anxiety and lower cry task persistence. Parents with high attachment anxiety may have felt heightened guilt in response to the infant's distress as a result of their failure to soothe the baby, leading them to end the task early. Longitudinal research is needed to lend further mechanistic explanation and clarity to the temporal order of these effects. Nonetheless, this pattern of results fits with prior studies linking attachment anxiety with the experience of heightened negative emotion as a parent (Borelli, Nelson-Coffey et al., 2017; Rholes et al., 1995; River et al., 2016) and increased guilt and shame in response to interpersonal stress (Mikulincer & Shaver, 2005) as well as the tendency to display decreased awareness of and ability to respond sensitively to children's needs (Burkhart et al., 2017; River et al., 2016; Selcuk et al., 2010). We add to an emerging literature examining how attachment insecurity is associated with well-being and behavior of working parents (Nelson-Coffey et al., 2017; River et al., 2016), illustrating that working parents with high attachment anxiety may be prone to guilt and self-blame and in turn, become overwhelmed by the emotional load of their children's distress.

Moreover, although the WIF-conflict prime did not appear to relate to guilt and cry task persistence in the sample generally, attachment anxiety moderated associations between WIF-conflict and study outcomes: Parents with low attachment anxiety reported lower levels of WIF-guilt in response to WIF-conflict, compared to those with average or high attachment anxiety. Perhaps parents with low attachment anxiety are protected against the adverse emotional effects of WIF-conflict. Additionally, we found that, when considering only WIF-conflict-primed participants, greater attachment anxiety predicted greater WIF-guilt.

Parents who report experiencing anxiety about abandonment by attachment figures may view WIF-conflict as a threat to the parent-child relationship (Mikulincer et al., 2003), which could lead to negative, self-blaming emotion (i.e., WIF-guilt). Perhaps high attachment anxiety parents are more prone to worry and self-blame about the negative impact of their actions on children because they possess stronger desires for intimacy and greater fears of rejection, leading them to feel guilty for potentially harming their relationships or their closeness with their children (Hazan & Shaver, 1987). When work and family collide, high anxiety parents may fear negative interpersonal sequelae—for instance, they might feel particularly torn in the context of work-family conflict because they dislike disappointing work colleagues *and* fear

failure as a parent. Recurrent and aversive experiences of guilt could exert negative impacts on parents' mental health: Considering that working parents with high attachment anxiety report elevated symptoms of depression and anxiety (River et al., 2016), and pathological guilt has been implicated in the etiology of psychological disorders like depression and anxiety (Ghatavi et al., 2002; Shapiro & Evelyn Stewart, 2011), it would be worthwhile to assess in future work whether the experience of excessive and inappropriate guilt underlies risk for depression and anxiety in high attachment anxiety working parents.

We found that parents with high attachment anxiety displayed less persistence on the cry task when primed with WIF-conflict, compared to parents with low and average levels of attachment anxiety. Critically, it appears that when parents experience everyday work-family conflict, those who are high in attachment anxiety may be at risk for less persistence in responding to infant crying. If replication studies show that our findings generalize to parents' behavior with their own children, this reduction in cry task persistence could have negative repercussions for children's attachment and psychosocial outcomes (De Wolff & van Ijzendoorn, 1997). It is possible that parents with high attachment anxiety may experience greater distress in response to WIF-conflict, which then reduces their ability to endure infants' distress (Rutherford, Booth et al., 2015; Senécal et al., 2001), resulting in avoidance of the distress signals. This theory is consistent with evidence from a separate literature, showing that adults with anxiety disorders engage in avoidance of aversive stimuli (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). If adults with high attachment anxiety exhibit a similar behavioral response as adults high in general anxiety, they may display avoidant behavior and prematurely withdraw and stop trying to soothe their children. To our knowledge, this model of behavioral avoidance as a function of attachment anxiety has not been tested. Additional research is necessary to disentangle the cognitive and emotional processes underlying high attachment anxiety parents' diminished distress tolerance in response to WIF-conflict.

Contrary to our hypotheses, the WIF-conflict prime did not induce WIF-guilt or reduce cry task persistence in the overall sample. The present WIF-conflict manipulation may not have been strong enough to elicit negative emotion and reduce distress tolerance among most parents. Reading a vignette about how another parent's experience of work responsibilities inhibited her/his ability to fulfill parenting duties may not be as evocative as experiencing WIF-conflict firsthand. An alternative method of experimentally inducing WIF-conflict might be to ask parents to describe in detail a time when their own work obligations interfered with family life. Additionally, the null effect of WIF-conflict priming on cry task persistence could reflect that parents experiencing WIF-conflict simply feel less efficacious and sensitive during their interactions with children, but that these effects do not extend to the level of observable behavior. It is also possible that parents facing WIF-conflict show decreased tolerance in response to the sound of their own infant crying (but not to another infant's cry; Kim et al., 2011), or only when physically holding a crying infant (rather than listening on a computer). Replication and examination of other parenting outcomes will shed additional light on the extent and direction of the links among WIF-conflict, WIF-guilt, and parenting.

Strengths, Limitations, and Future Directions

This study has multiple strengths that make a meaningful contribution to the work–family conflict and guilt literature. Notably, we employed an experimental induction of WIF-conflict to begin assessing its impact on parents' WIF-guilt and infant distress tolerance. Moreover, we are among the first to examine the association between WIF-conflict and parenting-relevant behavior, following studies linking WIF-conflict with self-reported parenting efficacy and parents' perceptions of the quality of parent–child interaction (e.g., Gali Cinamon et al., 2007). Finally, we took an important step to test whether attachment anxiety is a risk factor for the negative emotional and behavioral effects of WIF-conflict.

Nonetheless, several limitations should be considered. First, it is critical to examine the reliability of our infant cry task and further test the validity of the task by examining the convergence between our distress tolerance outcome and in-person observations of parents' persistence in responding to a video of an infant crying (e.g., Leerkes, 2010), to a crying doll (e.g., Rutherford et al., 2013) and to their own infant crying (e.g., Bakermans-Kranenburg et al., 2015). Our online task is efficient to administer, but it does not allow parents to attempt soothing techniques as they would in person (i.e., holding a bottle to a baby's mouth rather than dragging an icon to represent administering a bottle) and therefore may not have been realistic to parents. To this point, the average persistence time in our sample was 85.11 s (1.42 min), whereas Rutherford et al. (2013) noted a much longer average persistence time of 767 s (12.78 min) when utilizing an in-person crying doll method. In an in-person pilot of our cry task, the mean persistence was 199.22 s (3.32 min). This in-person versus online discrepancy may suggest that parents did not find the online cry task to be compelling but does not preclude the possibility that variation between parents in the online task is still meaningful and indicative of similar underlying parenting processes as to the in-person cry tasks. Additionally, the age of the crying infant in the video (approximately 6–12 months) may not have closely resembled the age of participants' children (1–3 years), potentially reducing the external validity of the assessment. Although we attempted to indicate gender-neutrality with the images of the baby and the soothing techniques, it is possible that parents may have made attributions regarding the gender of the baby: The issue of whether infant gender affects responses to the task should be addressed systematically in future research. Above all, it will be essential in future studies to administer a debriefing survey to parents to ask how realistic and evocative they found the online cry task to be, and how they believe their behavior on the cry task compares to their parenting behavior in everyday life.

Further, because the study was conducted online, it is possible that participants may have turned off the audio on their computers or tablets, which would have affected the validity of the cry task. Participants may also have skipped the task or attempted the task using a smartphone, which would be reflected in our missing task persistence data ($n = 36$). Research should replicate our findings using an in-person administration of the computer task to ensure fidelity to the instructions.

Additional research should investigate whether there is an association between persistence on the infant cry task and in-person sensitivity to infant distress per se, and compare the predictive validity of these two constructs for the quality of parent–child attachment and child developmental outcomes (McElwain & Booth-LaForce, 2006; Sroufe, 2005). If performance on the cry task is comparable, the online infant cry

paradigm may represent a novel, efficient method of assessing risk for parenting insensitivity and predicting child outcomes.

Finally, our novel approach to WIF-conflict priming requires further tests of reliability and validity. In future work, it would be useful to compare multiple vignettes with varying occupational and personal reasons for conflict with family obligations (e.g., strain or required behavior at work interfering with family; Greenhaus & Beutell, 1985), different types of family obligations, and different child gender, to establish reliability for the vignette WIF-conflict priming method. Although random assignment to experimental or control conditions minimized the chances that our effects were driven by baseline group differences in levels of WIF-guilt, we are unable to conclusively determine whether exposure to the WIF-conflict prime elicits WIF-guilt without a pre-manipulation measure of WIF-guilt. Longitudinal designs may be better equipped to include baseline WIF-guilt measurement without risking potential interference with the WIF-conflict prime. Such studies will shed light on whether WIF-guilt is a reaction to WIF-conflict, or if parents perceive greater WIF-conflict when they experience greater WIF-guilt. This investigation should be replicated in samples with greater ethnic and socioeconomic diversity to better determine the applicability of our results. Studies should also examine whether results differ in samples of parents who are salaried versus working for hourly wages, as well as between parents who have been working for varying lengths of time after the birth of their child (i.e., to rule out the influence of length of experience juggling work and family on results). If future studies support our findings, however, it may prove fruitful to design and implement clinical interventions supporting working parents with high attachment anxiety. When working with employed parents, clinicians should attend to ways in which parents' fears about rejection and concerns about work posing a threat to the quality of their relationship with children may contribute to a sense of guilt and difficulty tolerating infant distress. In so doing, clinicians might help to identify a self-fulfilling prophecy in which parents' fears about work affecting their home life negatively influence their behavior and result in the feared outcome. In turn, such clinical interventions might prevent or reduce emotional distress and parenting insensitivity ensuing from WIF-conflict.

Conclusions

Taken together, our findings suggest that working parents with high levels of attachment anxiety may be at risk for guilt and less persistence in responding to infant crying when they encounter conflict between work and family. Given the ubiquity of work-family conflict, these processes may have profound implications for parents' and children's well-being.

ADDRESSES AND AFFILIATIONS

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