



What happens at home does not stay at home: The role of family and romantic partner conflict in destructive leadership

Angela M. Dionisi¹  | Julian Barling²

¹Sprott School of Business, Carleton University, Ottawa, ON, Canada

²Smith School of Business, Queen's University, Kingston, ON, Canada

Correspondence

Angela M. Dionisi, Sprott School of Business, Carleton University, 1125 Colonel By Drive, Ottawa, ON K1S 5B6, Canada.

Email: angela.dionisi@carleton.ca

Funding information

Social Sciences and Humanities Research Council of Canada

Abstract

Why leaders behave the way they do is of considerable importance. Our goal in this research was to understand how family-to-work conflict and romantic relationship conflict influence two different forms of destructive leadership, namely, abusive supervision and passive leadership. To do so, we invoke the conservation of resources theory. One hundred twenty-three leader–follower dyads participated. Leaders completed questionnaires on their own family-to-work conflict and romantic relationship conflict, depressive symptoms, and cognitive distraction. Their followers rated their abusive supervision and passive leadership. With the use of Hayes's PROCESS program, depressive symptoms mediated the effects of family-to-work conflict and romantic relationship conflict on abusive supervision, whereas cognitive distraction mediated the effects of family-to-work conflict on passive leadership. Implications and several directions for further research are offered.

KEYWORDS

abusive supervision, passive leadership, resource depletion, work–family

1 | INTRODUCTION

Why leaders behave the way they do is of considerable importance. Despite this, research continues to focus predominantly on the consequences of leadership (or “leadership effectiveness”; see Barling, 2014). At the same time, although great strides have been made in understanding the intersection of work and family life (e.g., Grzywacz & Butler, 2008), until recently (e.g., ten Brummelhuis, Haar, & Roche, 2014), how family functioning influences leadership behaviours has largely been ignored. Our goal in this study was to explore how leaders' personal lives (i.e., family-to-work conflict and romantic relationship conflict) impact the quality of leadership behaviours. More specifically, applying the conservation of resources (COR) theory (Hobfoll, 1989, 2001), we seek to help explain the enactment of two prominent forms of destructive leadership—namely, abusive supervision and passive leadership—given two different manifestations of resource depletion.

We believe this research is important for several reasons. First, although within their organizations leaders are powerful people

characterized by unique responsibilities, the demands placed on these employees go well beyond the walls of the organization. Leaders have personal lives. Some have children, romantic partners, and eldercare responsibilities—any number of personal demands that create stress and tension and potentially interfere with the ability to do their jobs well. Thus, a holistic understanding of the antecedents of destructive leadership necessitates the consideration of whether (and how) leaders' personal lives may impact their leadership behaviour. By focusing on how the intersection between work and family is experienced by leaders themselves (i.e., through its impact on both their well-being and behaviour), and on how discrete, extra-organizational family stressors (e.g., romantic relationship conflict) and personal resource drain (e.g., depressive symptomatology) impact leaders' professional lives, this study contributes to an understanding of the antecedents of destructive leadership behaviours, and the nature of these constructs. In so doing, we offer contributions to the leadership and work–family literatures.

Second, by differentiating between one active form (i.e., abusive supervision) and one passive form of negative leadership, and

exploring how different forms of resource drain may contribute to each, a more holistic and fine-grained picture of destructive leadership and its sources will be provided. Passive leadership involves leaders doing very little (if anything at all; Hinkin & Schriesheim, 2008) and, as such, is conceptually distinct from other forms of destructive leadership (including abusive supervision) that entail active behaviour on the part of the leader (Barling, 2014). However, largely fuelled by the misconception that “doing nothing causes nothing to happen,” to date, the majority of leadership theories and research pertaining to destructive leadership focus solely on the damaging behaviours enacted by leaders (Barling, 2014)—an approach that may be costly given the negative consequences that have been attributed to passive leadership (e.g., Barling & Frone, 2017). Thus, we answer the call to learn more about the nature and predictors of this less understood form of leadership (Barling, 2014), and in so doing, we contribute to theory development in each unique area of destructive leadership scholarship.

Third, by drawing on COR theory (Hobfoll, 1989, 2001), this study further develops our theoretical understanding of the predictors of negative forms of leadership. By articulating the ways in which stressful dynamics in one's home life can drain both the affective and cognitive resources of leaders and, in turn, negatively impact their work role in unique ways, a more comprehensive understanding of the processes involved in poor leadership will be obtained.

Last, from a practical perspective, should family life be shown to impact the quality of leadership behaviours, a possible point of intervention when it comes to discouraging negative forms of leadership will be identified. For example, organizations may find it beneficial to provide additional support to leaders experiencing the particular stressors found to impact leadership, and/or to provide resources that can counteract the negative interpersonal dynamics contributing to poor leadership quality, to *both* leaders and their families.

1.1 | Leadership and the family domain

Decades of research now point to the permeability, not independence, of work and family roles (e.g., Barling, 1990; Grzywacz & Butler, 2008). Whether exploring how experiences of workplace mistreatment decrease romantic relationship functioning (e.g., Dionisi & Barling, 2015), how daily levels of family-to-work conflict increase daily interpersonal conflict with colleagues (Sanz-Vergel, Rodríguez-Munoz, & Nielsen, 2015), or how stressors and strains at work and at home reciprocally influence one another (e.g., Demerouti, Bakker, & Bulters, 2004), the results are unambiguous: Work and family life are intertwined. As such, the need to consider the connection between the personal realm and the dynamics of leadership is emphasized. To this end, previous research has explored how organizational leaders might affect the quality of family experiences. For example, *experiencing* abusive supervision negatively affects family functioning (Carlson, Ferguson, Perrewé, & Whitten, 2011). Although findings such as these contribute to what we know about the well-being of employees, far less research has focused on the family lives of leaders *themselves*. In a rare exception, ten Brummelhuis et al. (2014) showed that leaders'

family-to-work conflict predicts leaders' burnout and declines in the enactment of support, leading to follower burnout. Moreover, leaders' family-to-work enrichment positively impacts follower engagement via leader engagement.

Although the aforementioned study represents an important advance, whether and how family and romantic partner experiences influence negative leadership behaviours remain unknown. Our goal in this study is to understand how destructive leadership is influenced by negative family experiences—namely, family-to-work and romantic relationship conflicts. More specifically, as elaborated upon below, we investigate these two familial experiences in light of their potentially depleting nature. Previous research conceptualizes each of these phenomena as potent role-based stressors (e.g., Parasuraman, Greenhaus, & Granrose, 1992; Randall & Bodenmann, 2009). These forms of familial conflict derived from different sources¹ have the potential to drain important resources that leaders need to do their jobs well (Byrne et al., 2014). We thus investigate how these familial resource drains impact leadership quality more generally, and the enactment of destructive leadership in particular, and we invoke the COR model (Hobfoll, 1989, 2002) to explain *how* this process may occur.

1.2 | Family demands, depletion, and destructive leadership

According to the COR theory (Hobfoll, 1989, 2001), individuals are characterized by a finite number of valued psychological characteristics (e.g., self-esteem), objects (e.g., housing), conditions (e.g., social support), and energies (e.g., time)—or in other words resources—that allow them to function in their environments. Further, given the limited nature of these resources, individuals strive to obtain and protect their resource reservoirs, and experience stress and suffering when these reserves become threatened and/or depleted. However, as people must expend their resources to address the various stressors that they do encounter, demands arising in one's life can threaten one's well-being, ultimately resulting in negative “states of being” such as dissatisfaction, depression, or physiological tension (Hobfoll, 1989, 2001; Grandey & Cropanzano, 1999).

Previous research has indeed extended COR theory to the family domain (e.g., ten Brummelhuis & Bakker, 2012), demonstrating how the demands of one's family environment in particular, can serve a depleting role. As individuals must invest their energies into the resolution of problems, when conflict is experienced in the family, fewer resources are left available to fulfil one's roles and responsibilities at work. As an example, while on the job a leader may ruminate about the argument s/he had earlier with her or his romantic partner—an activity that drains valuable cognitive and emotional energies (e.g., Lyubomirsky, Kasri, & Zehm, 2003) needed to mentor her or his followers. Thus, the COR theory demonstrates how the stressors and

¹The source of romantic relationship conflict is clear and may be implicated in feelings of family-to-work conflict. However, the source of family-to-work conflict goes beyond the romantic relationship and could plausibly include childcare or eldercare issues (for instance).

demands that leaders face at home may diminish their personal “resource reservoirs” (Hobfoll, 2002), compromising their ability to enact high-quality leadership.

Research has indeed shown the negative impact of diminished resources on a variety of organizational outcomes (e.g., burnout, work withdrawal; Chi & Liang, 2013; Halbesleben, 2006). Within the leadership realm specifically, Byrne et al. (2014) showed that leaders' affective resource depletion resulted in lower levels of transformational leadership and higher levels of abusive supervision, whereas Courtwright, Gardner, Smith, McCormick, and Colbert (2015) showed that when leaders' self-regulatory resources are depleted, abusive supervision is more likely to occur. We build upon this burgeoning area of study by examining the impact of two specific familial drains on leaders' resources (viz. family-to-work conflict and romantic relationship conflict), as well as the resulting affective and cognitive manifestation of this resource drain.

1.2.1 | Family demands

Previous research exploring the intersection of work and family has often noted the conflict that can exist between these roles. When the time devoted to, the strain resulting from, and/or the behaviours required by one's family roles and relationships make it difficult to satisfy work responsibilities, *family-to-work conflict* is said to exist (Greenhaus & Beutell, 1985). Not surprisingly, this form of conflict can act as a potent stressor, with numerous studies pointing to the stain outcomes that emanate from it. For example, this state is linked to poorer well-being and physical health, dissatisfaction with life, and drinking problems (for a review, see Bellavia & Frone, 2005). Family-to-work conflict also longitudinally predicts the use of sleep medication among women, with weaker effects emerging for work-to-family conflict (Lallukka et al., 2013).

Romantic relationship conflict is also stressful (Burman & Margolin, 1992). Although numerous approaches to conceptualizing manifestations of interpersonal conflict such as this have been forwarded (Barki & Hartwick, 2004; Zacchilli, Hendrick, & Hendrick, 2009), generally speaking, interpersonal conflict represents “a dynamic process that occurs between interdependent parties as they experience negative emotional reactions to perceived disagreements and interference with the attainment of their goals” (Barki & Hartwick, 2004, p. 234). Thus, romantic partners can be said to be experiencing conflict when (for example) they oppose one another's ideas, argue about which course of action to take, or disagree about matters important to their relationship.

Research now supports the demanding nature of conflictual romantic interactions, documenting their negative effects on mental, physical, and familial well-being (Fincham, 2003). Romantic relationship conflict has also been linked to substance abuse (e.g., Murphy & O'Farrell, 1994) and physical illnesses such as cancer and cardiac disease (e.g., Schmalings & Sher, 1997).

Importantly, from the COR theory perspective, family-to-work and romantic relationship conflict will act as powerful stressors within the familial domain that drain individuals' (and in this case leaders')

resources. More specifically, as leaders must expend their energies to try to cope with these taxing demands, the resources they have to deal with other challenges necessarily become depleted (Hobfoll, 2002)—which as revealed below could have costly implications for their leadership behaviour.

1.2.2 | Family demands and depressive symptoms

We assert that the manner in which resource depletion will materialize for leaders is critical in this process. In particular, we believe that one of the ways that resource depletion will manifest is affectively, taking the form of subclinical depressive symptoms—a “negative state of being” that is emblematic of drained emotional energies (Byrne et al., 2014; Hobfoll, 1989, 2001; Grandey & Cropanzano, 1999).

Concerning family-to-work conflict, previous research demonstrating the emotional toll that this stressor produces, supports this conjecture. For example, studies have shown how family-to-work conflict is related to negative emotions such as guilt (Livingston & Judge, 2008), and how among females this demand is linked with emotional exhaustion (Posig & Kickul, 2004). Moreover, Frone (2000) analyzed the relationship between family-to-work conflict and several psychiatric disorders using data from a representative sample of employees in the United States. Family-to-work conflict was positively associated with clinically significant diagnoses of mood, anxiety, and substance dependence disorders. Importantly, the impeding demands of one's family can also result in physiological effects potentially linked with affective impairment. For example, even after controlling for work-to-family conflict, family-to-work conflict predicted lower waking levels of cortisol (i.e., a hormone secreted to combat stressors; Dedovic, Duchesne, Andrews, Engert, & Pruessner, 2009) and a less healthy diurnal cortisol slope (Zilioli, Imami, & Slatcher, 2016). That family-to-work conflict may result in depressive symptoms might also be expected, given its negative impact on self-perceptions. In line with identity theory, family-to-work conflict undermines individuals' positive work-related self-image—a core component of the sense of self (Frone, 2000). Threats to identity are psychologically upsetting and may result in depressive symptoms.

We also suggest that romantic relationship conflict will be associated with depressive symptomatology. Based on the marital discord model (Beach, Whisman, & O'Leary, 1994), research documents that discordant, conflictive marital relationships result in depression when they lack five characteristics that are central to its prevention, namely, couple cohesion, positive emotional expression, self-esteem support, perceptions that one's spouse is dependable, and intimacy. Specific support for the marital discord model can be seen in research documenting how marital dissatisfaction predicts the emergence of depressive symptoms one year later (Beach, Katz, Kim, & Brody, 2003), and that any reductions in depression following marital therapy are mediated by increases in marital adjustment (Beach & O'Leary, 1992).

Thus, when taken together, we first posit that family-to-work and romantic relationship conflict will be associated with affective resource drain among leaders, manifesting as subclinical depressive

symptoms. However, following the COR perspective, this affective state of resource depletion will have implications for the way that leaders enact their role.

1.2.3 | Family demands, depressive symptoms, and abusive supervision

Abusive supervision is manifest in ongoing displays of verbal and non-verbal (nonphysical) hostility (e.g., public ridicule and rudeness; Tepper, 2000). As revealed above, abusive supervision is certainly costly to employees and organizations, although less is known about its antecedents. Of the research that has been conducted, the role of leader characteristics (e.g., machiavellianism; Kiazad, Restubog, Zagencyk, Kiewitz, & Tang, 2010), contextual (e.g., national culture; Luthans, Peterson, & Ibrayeva, 1998), and organizational (e.g., work unit structure; Aryee, Sun, Chen, & Debrah, 2008) factors have been identified as precursors. Further, others have focused on how abusive supervision may be a product of social learning or identity threat (Tepper, Simon, & Park, 2017).

We build on this research suggesting that depressive symptoms will predict abusive supervision. As individuals must exert control over the self to regulate negative thought patterns and associated destructive responses (Baumeister, 1997), experiences that compromise this ability to engage in self-control increase the likelihood that self-defeating or antisocial impulses will be expressed. In line with the perspective that abusive supervision may be rooted in self-regulatory impairment (Tepper et al., 2017), depressive symptoms may in fact stifle one's capacity for self-control, making the display of abusive supervision more likely. Indeed, depression has been described as a disorder of self-regulation (Strauman, 2002). According to neurobiological research, low serotonergic function—a common property of depression—is closely connected to reduced impulse control and self-regulatory impairment; this helps to explain why individuals experiencing depressive symptoms have diminished executive control, are prone to aggressive responses, and are especially reactive to affective cues (Carver, Johnson, & Joormann, 2008). The dysregulation of emotion is also a key feature of depression; research utilizing functional magnetic resonance imaging demonstrates how depressed individuals have more difficulty regulating sad feelings (Beauregard, Paquette, & Levesque, 2006). In fact, the low energy and pessimism characteristic of depressive symptomatology, itself reflects a reduced capacity for self-regulation (Baumeister, Bratslavsky, Muraven, & Tice, 1998).

Finally, as managing problematic emotions (i.e., like those characteristic of depressive symptomatology) is a process that can itself consume personal resources, and repeated efforts to self-regulate in this way can lead individuals to experience further self-regulation impairment (Baumeister et al., 1998), the process of coping with depressive symptoms may result in additional energy loss and a stifled ability to exert self-control. In summary, by eroding the self-regulatory capacity that would normally suppress aggressive, antisocial impulses (DeWall, Baumeister, Stillman, & Gailliot, 2007), this manifestation of affective

resource drain should increase the likelihood that leaders will behave abusively.

Indeed, some leadership research exists supporting this notion. Kiewitz et al. (2012) showed that a history of undermining in one's family-of-origin predicted later enactment of abusive supervision, but only for those low in self-control; those high in self-control had the self-regulatory resources necessary to deal with the stress of family undermining. More recently, emotional labour arising from dealing with customers was shown to deplete leaders' state self-control, which then predicted abusive supervision (Yam, Fehr, Keng-Highberger, Klotz, & Reynolds, 2016). Only Courtwright et al. (2015) studied the effects of family-to-work conflict on abusive supervision, and their second study showed that leaders who experience family-to-work conflict display more abusive behaviours toward subordinates via ego depletion. Thus, when taken together, we predict that in eroding the affective resources of leaders, family-to-work and romantic relationship conflict will result in the enactment of abusive supervisory behaviour.

Hypothesis 1a. *Leaders' depressive symptoms will mediate the relationship between family-to-work conflict and abusive supervision.*

Hypothesis 1b. *Leaders' depressive symptoms will mediate the relationship between romantic relationship conflict and abusive supervision.*

1.2.4 | Family demands and cognitive distraction

As already noted, experiencing family-to-work and romantic relationship conflict depletes affective resources. However, this drain to one's resources is more widespread, and we suggest that these two family demands will also result in cognitive depletion. More specifically, when people experience problems in one role, they often dwell and ruminate on these stressors, becoming cognitively consumed while trying to deal with them successfully. In doing so, individuals have fewer cognitive resources available for successful completion of other role responsibilities (Rothbard, 2001). Thus, demands emanating from family-based conflict might lead to the self-regulatory process of self-focused attention, reducing one's capacity for cognitive engagement in other domains (Rothbard, 2001; Wood, Saltzberg, & Goldsamt, 1990). In line with COR theory, leaders may find themselves consumed by or ruminating over their familial and/or romantic relationship demands and thus experience a state of cognitive resource depletion manifesting as cognitive distraction.

There are indeed findings supporting the idea that conflict between family and work roles depletes cognitive resources in this manner. Family-to-work conflict was associated with attention and concentration difficulties, and with lower performance on a proof-reading assignment in which successful task completion required maximal focus (Barling & MacEwen, 1991). The relationship between interrole conflict and cognitive difficulties was also replicated in a

sample of young mothers (MacEwen & Barling, 1991). Separately, empirical support for the notion that dealing with romantic relationship conflict will drain cognitive resources can be found from research on working women experiencing intimate partner violence. Based on interviews with 10 employed females living in a women's shelter, seven reported experiencing difficulties concentrating at work as a result of abuse at home (Wettersten et al., 2004). LeBlanc, Barling, and Turner (2014) also showed that cognitive distraction at work was significantly higher among maritally dissatisfied women.

1.2.5 | Family demands, cognitive distraction, and passive leadership

We posit that leaders experiencing cognitive resource drain will be more likely to “avoid or delay taking necessary actions”—or in other words, display passive leadership (Barling & Frone, 2017, p. 211). Although there has been much academic interest in destructive leadership more generally, most of this research has focused on more visible and offensive ways that leaders harm employees and their organizations (Barling, 2014). Yet, leaders can be equally harmful by disengaging or withdrawing from their leadership responsibilities, for example, by failing to reward or punish their followers when appropriate (Hinkin & Schriesheim, 2008). Rizzo, House, and Lirtzman (1970) initially showed that what they referred to as “role abdication” predicted followers' role ambiguity and role conflict. Subsequent research has replicated and extended these findings (e.g., Barling & Frone, 2017). In addition, passive leadership is associated with increases in bullying (Skogstad, Einarsen, Torsheim, Aasland, & Hetland, 2007), safety incidents and injuries (Kelloway, Mullen, & Francis, 2006) and decreases in employee well-being (Barling & Frone, 2017). Importantly, passive leadership is not uncommon; some estimates suggest that approximately 20% of employees have experienced passive leaders (Aasland, Skogstad, Notelaers, Nielsen, & Einarsen, 2010).

But why might leaders deny followers the recognition and rewards they deserve or the punishment that they warrant? Although very little research has contemplated this question, COR theory would suggest that cognitive distraction among leaders would lead to passivity. When faced with a drain to their resources, individuals often take on a defensive posture, trying to protect their remaining resources from further depletion (Hobfoll, 2001). Thus, leaders who are cognitively drained and distracted given familial and romantic role demands, may choose not to engage in leadership behaviours that will effectively drain their resources further. For example, rather than exerting the cognitive focus and energy necessary to accurately assess and then reward, punish, and/or correct follower behaviour, cognitively depleted leaders may take a less effortful and more resource defensive route, allowing the current course of subordinate action to continue without interference. Indeed, the cognitive processes required to switch back and forth between multiple tasks, problems, and demands—in this case addressing preoccupying personal thoughts (and their sources) versus addressing the demands of one's leadership role—is itself taxing to one's cognitive resources (Rubinstein, Meyer, &

Evans, 2001). Moreover, preoccupation with the demands and challenges that one is facing at home may prevent leaders from even noticing the behaviours of followers that require praise, criticism, or intervention, in the first place.

Findings from research highlighting the role of distraction to withdrawal behaviour more generally, also lend support to the notion that cognitive depletion may elicit passive leadership. For example, mothers' cognitive distraction predicts their withdrawal from activities with their children (Barling, MacEwen, & Nolte, 1993; MacEwen & Barling, 1991), while associations between cognitive distraction and work neglect (e.g., failing to attend meetings; LeBlanc et al., 2014) have also been shown. Thus, when taken together, we predict that in eroding the cognitive resources of leaders, family-to-work and romantic relationship conflict will result in passive leadership.

Hypothesis 2a. *Leaders' cognitive distraction will mediate the relationship between family-to-work conflict and passive leadership.*

Hypothesis 2b. *Leaders' cognitive distraction will mediate the relationship between romantic relationship conflict and passive leadership.*

Our conceptual model is depicted in Figure 1. Importantly, while experiencing cognitive distraction should be linked to passive leadership for the reasons outlined above, based on previous research showing that it is rumination (i.e., excessive focus) on the events, people, and scenarios that could incite antisocial conduct—not distraction from these things—that leads to aggressive responses (e.g., Bushman, 2002), experiencing cognitive distraction at work as a result of familial stressors should not encourage abusive supervision. On the other hand, while a drain to one's self-regulatory capacity (i.e., in the case of depression) should be linked to abusive supervision for the reasons outlined above, a lack of self-control necessarily implies the inability to regulate an impulse (i.e., a behaviour that one should or should not enact). Thus, that resource depletion taking this form would result in the *absence* of behaviour (i.e., passive leadership) is counterintuitive. As such, it is the specific type of resource drain experienced that we assert will result in the specific type of destructive leadership displayed.

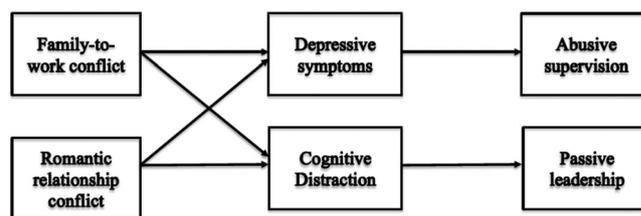


FIGURE 1 Indirect effects of family-to-work and romantic relationship conflicts on leadership behaviours through depressive symptoms and cognitive distraction

2 | METHOD

2.1 | Sample and recruitment

Participants for this study were recruited through ClearVoice—an online panel service that connects researchers with willing research participants. The move toward using online, panel-based methods for organizational research continues to grow (Sheehan, 2018), in part given this method can typically reach wider and more diverse populations, can have fewer demand characteristics, and is often more representative of the larger population (Berinsky, Huber, & Lenz, 2012; Dandurand, Shultz, & Onishi, 2008). Importantly, studies also confirm the quality of this data; research shows that data collected via panel sources replicate existing findings in the literature (e.g., Berinsky et al., 2012; Horton, Rand, & Zeckhauser, 2011), while the test–retest and internal validity of crowdsourced samples on a variety of measures (e.g., the five-factor model of personality, general mental health; Holden, Dennie, & Hicks, 2013; Schleider & Weisz, 2015) have also been shown. Further, response quality—as measured by differences in completion time, length of open-ended responses, and data consistency and completeness—does not differ between panel and more traditional samples, and at times even outperforms it (Behrend, Sharek, Meade, & Wiebe, 2011). Nonetheless, in line with the recommendations of others (e.g., Sheehan, 2018), we included several quality assurance questions, inconspicuously placed throughout the survey. Using attention checks such as this helps to ensure, first, that respondents are real people and not robots automatically completing surveys and, second, that respondents are paying attention (Sheehan, 2018). We also worked to ensure that we received qualified respondents by implementing specific screening protocols (i.e., employed adults occupying a leadership role) to be used by ClearVoice in their initial recruitment of focal participants (e.g., Sheehan, 2018).

Participants (i.e., leaders²) were each sent an online questionnaire. Before completing this questionnaire, participants were asked to send a recruitment notice containing a link to a separate online survey to one of their subordinates. Following others (e.g., Byrne et al., 2014; Harold & Holtz, 2015; Hoobler & Hu, 2013; Kiewitz et al., 2012), a single subordinate characterized his or her leader's behaviour. Consistent with ClearVoice procedures, participants received \$5.00 Amazon.com Gift Cards, Dining Dough Gift Certificates, or cash on a debit card for their participation. In all cases, participation was voluntary and confidential.

A total of 542 leaders and 172 followers completed online questionnaires. After omitting participants who failed to correctly respond to the quality assurance questions (leaders $n = 67$; followers $n = 12$), we were left with a total of 475 leaders and 160 followers. After the

data from these participants were matched, a sample of 123 leader–subordinate dyads remained.

The leaders (M age = 41.9 years, $SD = 9.96$; 55% male) were all currently in committed romantic relationships (M length = 15.15 years, $SD = 8.94$). Nine per cent of the leaders had completed high school (coded “1”), 12% had received a college diploma (“2”), 35% an undergraduate degree (“3”), 30% had a graduate degree and 13% had a professional designation (both coded as “4”). On average, the leaders had spent 9.48 years with their current employers ($SD = 6.31$).

The followers (77% male) were significantly younger (M age = 36.97 years, $SD = 9.22$; paired $t(125) = 6.50$, $p < 0.01$) than were leaders and had attained significantly less formal education (17% had completed high school, 14% had received a college diploma, 36% had an undergraduate degree, 29% a graduate degree, and 4% a professional designation; paired $t(120) = 2.70$, $p < 0.01$).

2.2 | Measures

2.2.1 | Leader reports

Family-to-work conflict

Family-to-work conflict was assessed using Netemeyer, Boles, and McMurrian's (1996) short self-report scale. Participants were asked to respond to five items (e.g., “I have to put off doing things at work because of demands on my time at home”) in reference to the last 6 months, on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*).

Romantic relationship conflict

We used four items from the *Frequency* subscale and six items from the *Resolution* subscale of the Children's Perceptions of Interparental Conflict Scale (Grych, Seid, & Fincham, 1992) to measure romantic relationship conflict; subsequent analyses (Grych, Jouriles, Swank, McDonald, & Norwood, 2000) confirm the factorial structure. The two factors were significantly correlated in the present study ($r = 0.64$, $p < 0.01$) and were combined to form an overall score for romantic relationship conflict. We adapted the scale so that each of the items reflected individuals' perceptions of their romantic relationship, rather than children's perceptions of their parents' relationship. For example, “My parents hardly ever argue” was changed to “We hardly ever argue” (reverse coded). Respondents indicated whether each of the statements was “false” (scored as 1), “sort of or sometimes true” (scored as 2), or “true” (scored as 3), in reference to their experiences with romantic partners over the last 6 months.

Depressive symptomatology

Depressive symptomatology was measured with Radloff's (1977) Center for Epidemiologic Studies Depression Scale, which is appropriate for community samples. Respondents were asked to indicate how frequently over the last 6 months they experienced each of the 20 items (e.g., “I felt depressed”) using a 4-point scale (from *not at all—less than 1 day in the last week* = 1, through *most or all of the time—5–7 days in the last week* = 4).

²When signing up with ClearVoice, individuals complete numerous self-report measures, including ones assessing their employment details. This information is then repurposed to target participants characterized by particular demographics (in our case leaders), using profile filters. As a secondary check, participants were also asked whether they were leaders at the beginning of the survey and were disqualified if they indicated they were not. This secondary filter helped ensure that participants' current statuses were reflective of their ClearVoice profile, as leadership status can change over time.

TABLE 1 Descriptive statistics, intercorrelations, and internal consistency (α) for all study variables ($N = 123$)

Variable	M	SD	1	2	3	4	5	6	7	8	9
1 Leader age	41.89	9.96	—								
2 Leader sex ^a	0.46	0.50	0.00	—							
3 Liking of the leader	4.32	0.63	0.28**	0.12	0.86						
4 Romantic relationship conflict	1.55	0.43	-0.28**	-0.06	-0.32**	0.82					
5 Family-to-work conflict	3.01	1.85	-0.40**	-0.05	-0.14	0.49**	0.96				
6 Depressive symptoms	1.71	0.54	-0.37**	-0.08	-0.24**	0.53**	0.67**	0.91			
7 Cognitive distraction	2.81	1.36	-0.38**	0.07	-0.11	0.47**	0.82**	0.78**	0.89		
8 Abusive supervision	1.53	0.92	-0.29**	0.08	-0.24**	0.42**	0.47**	0.68**	0.55**	0.98	
9 Passive leadership	2.30	1.06	-0.37**	0.09	-0.23*	0.39**	0.64**	0.49**	0.65**	0.62**	0.95

Note. Internal consistency (α) is in bold on the diagonal.

^a1 = male, 2 = female.

* $p < 0.05$. ** $p < 0.01$.

Cognitive distraction

Cognitive distraction was assessed with 10 items from the Cognitive Difficulties Scale (Fryer & Warr, 1984). Respondents endorsed how strongly they agreed that each of the items (e.g., “been unable to concentrate”) described their behaviour at work on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*), over the last 6-month period.

2.2.2 | Follower reports

Abusive supervision

Abusive supervision was assessed over the last 6 months with Tepper's (2000) 15-item scale. Followers indicated on a 5-point scale (0 = *I cannot remember him or her ever using this behaviour with me*, through 4 = *He or she uses this behaviour with me very often*) the frequency with which their leaders enacted abusive behaviours (e.g., “Tells me my thoughts or feelings are stupid”).

Passive leadership

Passive leadership was assessed over the previous 6-month period with the four-item *Reward* (e.g., “I often perform well in my job and still receive no praise from my manager”) and *Punishment* (e.g., “My manager gives me no feedback when I perform poorly”) *Omission* subscales from Hinkin and Schriesheim (2008). Respondents rated items on a 5-point scale (1 = *not at all* to 5 = *frequently, if not always*). The two subscales were highly intercorrelated ($r = 0.84$, $p < 0.01$) and were combined to form a global, eight-item passive leadership measure.

Liking of the leader

We assessed general liking of the leader using the same four items as Brown and Keeping (2005). The four items (e.g., “I get along well with my supervisor”) are rated on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*).

3 | DATA ANALYSIS

All data analyses were computed using SPSS23. Our first two hypotheses involve tests of mediation (also called indirect effect models; see

Hayes, 2018), which we assessed using procedures implemented through Hayes' PROCESS program V3.0 (<http://www.afhayes.com>; Hayes, 2018). Statistical significance of the indirect effects was determined using bias-corrected 95% confidence intervals based on 5,000 bootstrapped resamples (because sampling distributions of indirect effects are nonnormal; MacKinnon, Lockwood, & Williams, 2004). The indirect effect was taken as significant ($p < 0.05$) if the bias-corrected confidence interval for an indirect effect did not include zero. Moreover, analyses were conducted using parallel multiple mediator models—a method that allows for more than one mediator variable to be entered into the same model simultaneously, while still testing for the indirect effect of each individual mediator variable controlling for all others in the model (Hayes, 2018). Given the requirements of the PROCESS modelling macro, separate models were computed for each of the outcome variables.³ Unstandardized regression coefficients are reported for tests of indirect effects (Hayes, 2018). In addition, partially standardized effect sizes, which reflect the magnitude of each indirect effect in terms of standard deviation units (rather than the original metric) of Y (Hayes, 2018), are reported to evaluate the importance of each indirect effect (see below).

In all analyses, leaders' age was controlled, as it was associated with all predictors, mediators, and outcomes (see Table 1). Leaders' sex was controlled given sex differences in family-to-work conflict (Allen & Finkelstein, 2014) and leader behaviours (Barling, 2014). Leader liking was controlled as leaders may have invited employees who were more favourably disposed to them to participate in this research. Last, to show the unique effects of each predictor (i.e., family-to-work and romantic relationship conflict), we included the alternative predictor as a control in the respective model. For example, when estimating models with family-to-work conflict as the predictor, romantic relationship conflict was controlled (and vice versa). When PROCESS is run as such, the unique effects of the focal variable are generated.

³Although separate models were run for each outcome, given the redundancy of data (i.e., the impact of all predictor variables on both mediators and both outcomes are tested in each model, thus yielding duplicate beta coefficients), results from these analyses have been combined into one table (i.e., Table 3).

4 | RESULTS

Descriptive statistics, internal consistency, and intercorrelations of all study variables appear in Table 1.

4.1 | Test of the measurement model

Because of the substantial correlations between the predictor (family-to-work conflict, romantic relationship conflict), mediator (depressive symptomatology, cognitive distraction), and leadership (abusive supervision, passive leadership) measures (see Table 1), we assessed the measurement model (Anderson & Gerbing, 1988). To do so, we subjected several different models to confirmatory factor analysis using AMOS 24. Our conceptual model is reflected in a six-factor model, with all predictor, mediator, and outcome variables reflected as separate factors. We compared this conceptual model against four alternative models: (a) a five-factor model in which the two leadership variables are combined but the predictor and mediator variables remain separate; (b) a four-factor model in which the mediator and leadership variables are represented by a single variable but the predictor variables remain separate; (c) a three-factor model with the predictor, mediator, and outcome variables loading as separate factors; and (d) a single-factor model in which all six variables load together. Because of the number of items (62) relative to the sample size ($N = 123$ dyads), we used an item parcelling approach, with items aggregated to form three separate variables for each construct.

As can be seen from Table 2, the conceptual model represented by six separate factors provided a good fit to the data. In addition, the six-factor model fit the data significantly better than did five-factor, four-factor, three-factor, and one-factor models, justifying the assessment of our conceptual model.

4.2 | Family-to-work conflict, resource depletion, and destructive leadership

Our first Hypothesis (1a) that family-to-work conflict indirectly affects abusive supervision through depressive symptoms was supported. As can be seen from Table 3, family-to-work conflict predicted depressive symptoms ($b = 0.14, p < 0.01$), and after the effects of leader age and sex, follower liking of the leader, romantic relationship conflict, and cognitive distraction were controlled for, depressive symptoms predicted abusive supervision ($b = 1.13, p < 0.01$). The indirect effect

through depressive symptoms was significant ($b = 0.23, SE = 0.11, CI [0.05, 0.45]$).

Hypothesis 2a predicted that family-to-work conflict would be indirectly associated with passive leadership through cognitive distraction. Family-to-work conflict was significantly associated with cognitive distraction ($b = 0.57, p < 0.01$; see Table 3). After leader age and sex, follower liking of the leader, romantic relationship conflict, and depressive symptoms were controlled for, Hypothesis 2a was supported: Cognitive distraction predicted passive leadership ($b = 0.31, p < 0.01$), and the indirect effect of family-to-work conflict on passive leadership through cognitive distraction was significant ($b = 0.18, SE = 0.06, CI [0.06, 0.31]$; see Table 3).

4.3 | Romantic relationship conflict, resource depletion, and destructive leadership

Hypothesis 1b suggested that romantic relationship conflict would indirectly affect abusive supervision through depressive symptoms. Romantic relationship conflict was significantly associated with depressive symptoms ($b = 0.29, p < 0.01$; see Table 3), and depressive symptoms were significantly associated with abusive supervision after controlling for leader age, sex, liking of the leader, family-to-work conflict, and cognitive distraction ($b = 1.13, p < 0.01$). The indirect effect of romantic relationship conflict on abusive supervision was significant ($b = 0.33, SE = 0.14, CI [0.11, 0.65]$), supporting Hypothesis 1b; see Table 3).

We also hypothesized that romantic relationship conflict would indirectly influence passive leadership through cognitive distraction. However, as romantic relationship conflict did not predict cognitive distraction ($b = 0.34, p = ns$; see Table 3), Hypothesis 2b was not supported. Partially standardized effects for each mediation model appear in Table 4.

5 | DISCUSSION

Our findings showed that family demands affect different forms of destructive leadership through different forms of depletion. In so doing, this study speaks to the influence of leaders' personal lives in the enactment of their work roles. Specifically, both family-to-work conflict and romantic relationship conflict affected abusive supervision (but not passive leadership) indirectly through depressive symptoms. Family-to-work conflict also affected passive leadership, but this

TABLE 2 Confirmatory factor analysis test of the measurement model

Model tested	χ^2	df	RMSEA	CFI	χ^2 difference test vs. six-factor model
6-Factor model	238.36	120	0.089	0.95	—
5-Factor model	505.33	125	0.156	0.84	$\Delta\chi^2(5) = 266.97, p < 0.001$
4-Factor model	626.50	129	0.176	0.80	$\Delta\chi^2(9) = 388.14, p < 0.001$
3-Factor model	646.58	132	0.176	0.79	$\Delta\chi^2(12) = 408.22, p < 0.001$
1-Factor model	1,179.43	135	0.249	0.57	$\Delta\chi^2(15) = 941.07, p < 0.001$

Note. CFI: comparative fit index; RMSEA: root mean square error of approximation.

TABLE 3 Indirect effects of family-to-work and romantic relationship conflicts through depressive symptoms and cognitive distraction, on abusive supervision and passive leadership ($N = 123$)

Predictor	Mediators						Outcomes					
	Depressive symptoms			Cognitive distraction			Abusive supervision			Passive leadership		
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>
Leader sex ^a	-0.05	0.07	-0.65	0.25	0.14	1.77	0.21	0.13	1.61	0.23	0.14	1.61
Leader age	-0.00	0.00	-0.96	-0.01	0.01	-0.92	-0.00	0.01	-0.02	-0.01	0.01	-1.02
Liking of the leader	-0.08	0.06	-1.41	0.08	0.12	0.70	-0.17	0.11	-1.56	-0.24	0.12	-1.95*
Romantic relationship conflict	0.29	0.10	3.04**	0.34	0.20	1.76	0.07	0.19	0.40	0.12	0.20	0.58
Family-to-work conflict	0.14	0.02	6.29**	0.57	0.05	12.61**	-0.03	0.06	-0.46	0.15	0.07	2.11*
Cognitive distraction	—	—	—	—	—	—	—	—	—	0.31	0.11	2.88**
Depressive symptoms	—	—	—	—	—	—	1.13	0.20	5.61**	—	—	—
Direct effect of family-to-work conflict							<i>b</i> = -0.03, <i>SE</i> = 0.06, <i>CI</i> [-0.15, 0.10]			<i>b</i> = 0.15, <i>SE</i> = 0.07, <i>CI</i> [0.01, 0.28]		
Direct effect of romantic relationship conflict							<i>b</i> = 0.07, <i>SE</i> = 0.18, <i>CI</i> [-0.29, 0.44]			<i>b</i> = 0.12, <i>SE</i> = 0.20, <i>CI</i> [-0.28, 0.52]		
Conditional indirect effect of family-to-work conflict through depressive symptoms							<i>b</i> = 0.23, <i>SE</i> = 0.11, <i>CI</i> [0.05, 0.45]			—		
Conditional indirect effect of family-to-work conflict through cognitive distraction							—			<i>b</i> = 0.18, <i>SE</i> = 0.06, <i>CI</i> [0.06, 0.31]		
Conditional indirect effect of romantic relationship conflict through depressive symptoms							<i>b</i> = 0.33, <i>SE</i> = 0.14, <i>CI</i> [0.11, 0.65]			—		
Conditional indirect effect of romantic relationship conflict through cognitive distraction							—			<i>b</i> = 0.11, <i>SE</i> = 0.08, <i>CI</i> [-0.02, 0.32]		

Note. CI: Confidence interval.

^a1 = male, 2 = female.

* $p < 0.05$. ** $p < 0.01$.

TABLE 4 Partially standardized indirect effects for mediational models

Model tested	<i>b</i>	<i>SE</i>	LLCI	ULCI
Family-to-work conflict → depressive symptoms → abusive supervision	0.17	0.05	0.08	0.27
Family-to-work conflict → cognitive distraction → passive leadership	0.17	0.06	0.06	0.30
Romantic relationship conflict → depressive symptoms → abusive supervision	0.35	0.14	0.12	0.67
Romantic relationship conflict → cognitive distraction → passive leadership	0.10	0.09	-0.02	0.32

Note. LLCI: Lower level confidence interval; ULCI: Upper level confidence interval.

Leader sex, leader age, and follower liking of the leader are controlled in all analyses; in all analyses involving family-to-work conflict, romantic relationship conflict is controlled and vice versa; in all analyses involving depressive symptoms, cognitive distraction is controlled and vice versa.

effect was mediated by cognitive distraction (and not depressive symptoms).

These findings are important for conceptual and methodological reasons. First, from a conceptual perspective, we have shown the importance of considering how different manifestations of family-generated resource depletion impact different manifestations of destructive leadership. Whereas previous research has investigated how ego depletion can negatively affect leaders' behaviour (i.e., Byrne

et al., 2014; Courtwright et al., 2015), our study highlights both the affective and cognitive toll that multiple family-based stressors can take on leadership. In so doing, we extend the body of research showing the widespread effects of the intersection of work and family more generally, and the non-work influences on destructive leadership in particular. Moreover, these results contribute to our theoretical understanding of the predictors of these negative leader behaviours, highlighting the utility of the COR model in articulating the processes involved in abusive supervision and passive leadership—a theoretical approach that is especially novel within the passive leadership literature.

Second, the fact that depressive symptoms mediated the effects of both family-to-work and romantic relationship conflict on abusive supervision but not passive leadership, whereas cognitive distraction mediated the relationship between family-to-work conflict and passive leadership but not abusive supervision, sheds more light on the differential predictors of two different forms of negative leadership. These results suggest that findings isolating affective depletion as a proximal predictor of abusive supervision do not extend to all forms of negative leadership. Instead, passive leadership is a function of cognitive overload and distraction. These findings can be considered robust as the mediating effects of depressive symptoms emerged after controlling statistically for cognitive distraction, and vice versa. Thus, a more holistic and fine-grained theoretical picture of destructive leadership and its sources—one that supports the conceptually distinct nature of these two variants of poor leadership behaviour—is obtained.

Third, previous research on what might broadly be regarded as inactive leadership, has mostly investigated laissez-faire leadership, reflecting the perception that leaders are *generally* inactive (see Judge & Piccolo, 2004). In contrast, we followed Hinkin and Schriesheim's (2008) approach which isolates two specific behaviours involved in passive leadership, namely, reward and punishment omission. In doing so, we begin to hone in on how this form of destructive leadership specifically materializes, and we highlight how being cognitively drained from non-work stressors might be sufficient to harm leadership quality. In this way, we contribute to a better understanding of the nature of this understudied form of destructive leadership.

Last, empirical interest in leaders' mental health has not been as robust as the interest in employees' mental health (Barling & Cloutier, 2017). Identifying the effects of leaders' depressive symptoms and cognitive distraction on the quality of leadership behaviours, as well as the indirect effects of family and romantic experiences on leadership quality, points to the importance of expanding our understanding of leaders' own mental well-being.

5.1 | Limitations

Like all research, our study is subject to limitations. One is that the data were collected cross-sectionally, precluding causal inferences. However, the possibility that our findings are susceptible to reverse causality is minimized for several reasons. First, the models linking family and romantic experiences with leaders' behaviour were all theoretically based. Second, there are studies using longitudinal data that support the directional hypotheses that form the conceptual basis of the current study. For example, Frone, Russell, and Cooper (1997) showed that family-to-work conflict predicted depressive symptoms over a 4-year period. Nonetheless, although experimental studies enabling causal inferences are improbable given the issue at hand, future research should be based on longitudinal data where possible. In doing so, experience sampling methods, as well as what Dormann and Griffin (2015) referred to as "shortitudinal studies" (i.e., panel studies conducted over shorter time periods), might be especially useful in isolating the psychological processes linking family-related experiences and leadership.

Second, the recruitment strategy we used asking leaders to invite one of their followers to participate in the study might have resulted in a selection bias if leaders' approached employees whom they thought might provide the most favourable ratings. The likelihood that this procedure biases the current findings is minimized, however, as we controlled statistically for followers' liking of their leaders in all analyses. Moreover, although exploring leader-subordinate dyads is customary in this area of study (Tepper et al., 2017), future research would benefit from multiple ratings of abusive supervision and passive leadership, especially given possible variance among followers in the experience of poor leadership behaviour (Tepper, 2000).

Third, although the use of leader and follower reports minimizes mono-method bias being a plausible threat, leaders did provide data on their family and romantic experiences, depressive symptoms, and

cognitive distraction. It remains unlikely that depressive symptoms contaminated leaders' reports of their own romantic relationship conflict, as observational studies confirm the accuracy of self-reports of marital dissatisfaction among depressed individuals (Beach et al., 1994). However, the possibility that cognitive distraction affected the accuracy of self-reported data cannot be excluded—an issue that should be addressed in future research.

Fourth, while we proposed that the enactment of abusive supervision is a manifestation of impaired self-regulation, we do not actually measure the capacity for self-regulation here. As such, future research may wish to test these (and other related) predictions by explicitly incorporating ego depletion measures such as those used by Barnes, Lucianetti, Bhave, and Christian (2015) and, in so doing, further illuminate the role of poor self-control in the enactment of destructive leadership.

5.2 | Future research

The current study points to several directions for future research that could enhance our understanding of how family-related resource depletion influences the quality of leadership. First, a primary lesson from the current study is that family-to-work and romantic relationship conflict affected different forms of destructive leadership through different mediating mechanisms. Future research should now seek to uncover other mediators that transmit the negative effects of family-related stressors on leadership quality. Extending our work, future research might focus on other indicators of affective resource depletion implicated in abusive supervision such as poor sleep quality (Barnes et al., 2015) or workplace alcohol consumption (e.g., Byrne et al., 2014). Trying to understand predictors of passive leadership, future research might further examine aspects of cognitive resource depletion such as poor leadership-specific self-efficacy. Moreover, whereas family-to-work conflict positively predicted cognitive distraction, romantic relationship conflict did not. Although the magnitude of the correlations between these variables may partially account for these null findings, future research should nonetheless consider how the nature of these two familial demands differ when it comes to their cognitive impact, especially given both were here connected to an affective form of resource depletion.

Second, future research should contemplate extending the current model to further reveal for whom, and/or when, familial demands may result in the types of resource depletion explored. For instance, self-efficacy is an important personal resource (Hobfoll, 2001) reflecting the belief that one can successfully execute behaviours necessary to produce desired outcomes (Bandura, 1997). Leaders who doubt their ability to address familial demands may be particularly prone to experiencing negative affect and a sense of hopelessness (i.e., depressive symptomatology; Kavanagh, 2014). On the other hand, leaders characterized by this resource may respond to familial stressors by focusing intently (and perhaps absolutely) on the ways they can resolve these demands (i.e., cognitive distraction)—a conjecture supported by research connecting self-efficacy with problem-

focused coping (e.g., Chwalisz, Altmaier, & Russell, 1992). At the same time, future research could consider the role of cognitive appraisal in determining the form of leaders' familial resource depletion. According to the cognitive theory of stress and coping (Lazarus & Folkman, 1984), people's evaluations of stressors as harmful (i.e., damage already done), threatening (i.e., potential for harm), and/or challenging (i.e., potential for gain or growth) mediate the relationship between said stressors and reactions to them. When applied to the current context, depressive symptoms may occur among leaders appraising family-based stressors as harmful or threatening (e.g., belief that family demands have resulted in the loss of a valued promotion), whereas cognitive distraction may occur when leaders appraise familial demands as challenging and thus deserving of cognitive investment (e.g., belief that spousal conflict is an opportunity to learn about and/or grow closer to one's partner).

Third, it is possible that negative family experiences positively affect leadership quality, reflecting a compensatory rather than a spillover model. For example, believing you have neglected family responsibilities to fulfil work obligations might result in feelings of guilt, which may be sufficient to motivate greater efforts toward high-quality leadership (Schaumburg & Flynn, 2012)—a possibility that should be researched in the future. At the same time, future research should focus on whether and how positive romantic relationship experiences might affect positive leadership. For example, examining the effects of hedonic romantic relationship satisfaction and eudaimonic fulfilment (e.g., Fowers et al., 2016) might expand our understanding of the impact of positive romantic relationship functioning on leadership quality.

Finally, we focused on leaders' family-to-work and romantic relationship conflict. Research might now investigate how other family experiences such as eldercare responsibilities or caring for a sick child or one with special needs, might positively or negatively influence the quality of leadership. Moreover, determining whether certain leader or organizational characteristics minimize the destructiveness of familial demands on leadership, should be a priority. For example, leaders' psychological capital or organizational support could moderate any indirect effects of family demands on abusive supervision or passive leadership.

5.3 | Practical and policy implications

Our findings have potentially important implications for practitioners. In any attempt to confront poor-quality leadership in organizations, it would be critical to acknowledge that different varieties of destructive leadership appear to have different antecedents, each requiring different preventive approaches. For example, we showed that depressive symptomatology is implicated in abusive supervision. Thus, preventing or diminishing this form of destructive leadership might be achieved by strengthening affective resources through (for instance) wellness programs or counselling services. Alternatively, passive leadership was a function of cognitive depletion, and thus attempts to reduce or avoid passive leadership might be accomplished by

strengthening cognitive resources through (for instance) management training and leadership development. Although it is crucial to acknowledge that the antecedents of destructive leadership identified in this research lie outside of the workplace (in this case, within leaders' personal lives), the process-based nature of these behaviours revealed through this study, highlights that organizations can still play a central role in combatting destructive leadership, via attempts to bolster leaders' resources.

However, this gives rise to a vexing issue: Organizations are mostly reluctant to do anything that might be perceived as interfering with employees' private lives. One option for organizations might be to expand the focus of employee assistance programs and wellness initiatives to include meaningful romantic relationship and family counselling. In so doing, the negative forms of leadership we studied might be curtailed.

6 | CONCLUSION

Our goal in this study was to understand whether and how family-to-work and romantic relationship conflict affect destructive leadership. The findings show that family demands are associated with negative leadership behaviour and that different forms of negative leadership do not share the same antecedents. In this respect, the differential mediation by affective and cognitive resource depletion, adds to our understanding of the antecedents of leadership quality.

ACKNOWLEDGEMENT

Financial support from the Social Sciences and Humanities Research Council of Canada for the second author is acknowledged gratefully.

CONFLICT OF INTEREST

The authors have declared that they have no conflict of interest.

ORCID

Angela M. Dionisi  <https://orcid.org/0000-0002-7489-5615>

REFERENCES

- Aasland, M. S., Skogstad, A., Notelaers, G., Nielsen, M. B., & Einersen, S. (2010). The prevalence of destructive leadership. *British Journal of Management*, 21, 438–452.
- Allen, T. D., & Finkelstein, L. M. (2014). Work–family conflict among members of full-time dual-earner couples: An examination of family life stage, gender and age. *Journal of Occupational Health Psychology*, 19, 376–384. <https://doi.org/10.1037/a0036941>
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103, 411–423. <https://doi.org/10.1037/0033-2909.103.3.411>
- Aryee, S., Sun, L. Y., Chen, Z. X. G., & Debrah, Y. A. (2008). Abusive supervision and contextual performance: The mediating role of emotional exhaustion and the moderating role of work unit structure. *Management and Organization Review*, 4, 393–411. <https://doi.org/10.1111/j.1740-8784.2008.00118.x>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman and Company.

- Barki, H., & Hartwick, J. (2004). Conceptualizing the construct of interpersonal conflict. *International Journal of Conflict Management*, 15, 216–244. <https://doi.org/10.1108/eb022913>
- Barling, J. (1990). *Employment, stress and family functioning*. London: Wiley & Sons.
- Barling, J. (2014). *The science of leadership: Lessons from research for organizational leaders*. NY: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199757015.001.0001>
- Barling, J., & Cloutier, A. (2017). Leaders' mental health at work: Empirical, methodological and policy directions. *Journal of Occupational Health Psychology*, 22, 394–406. <https://doi.org/10.1037/ocp0000055>
- Barling, J., & Frone, M. R. (2017). If only my leader would just do something! Passive leadership undermines employee well-being through role stressors and psychological resource depletion. *Stress and Health*, 33, 211–222. <https://doi.org/10.1002/smi.2697>
- Barling, J., & MacEwen, K. E. (1991). Maternal employment experiences, attention problems and behavioural performance: A mediational model. *Journal of Organizational Behaviour*, 12, 495–505. <https://doi.org/10.1002/job.4030120604>
- Barling, J., MacEwen, K. E., & Nolte, M. (1993). Homemaker role experiences affect toddler behaviors via maternal well-being and parenting behavior. *Journal of Abnormal Child Psychology*, 21, 213–229. <https://doi.org/10.1007/BF00911317>
- Barnes, C. M., Lucianetti, L., Bhave, D. P., & Christian, M. S. (2015). "You wouldn't like me when I'm sleepy": Leaders' sleep, daily abusive supervision, and work unit engagement. *Academy of Management Journal*, 58, 1419–1437. <https://doi.org/10.5465/amj.2013.1063>
- Baumeister, R. F. (1997). Esteem threat, self-regulatory breakdown, and emotional distress as factors in self-defeating behavior. *Review of General Psychology*, 1(2), 145–174.
- Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology*, 74, 1252–1265. <https://doi.org/10.1037/0022-3514.74.5.1252>
- Beach, S. R. H., Katz, J., Kim, S., & Brody, G. H. (2003). Prospective effects of marital satisfaction on depressive symptoms in established marriages: A dyadic model. *Journal of Social and Personal Relationships*, 20, 355–371. <https://doi.org/10.1177/0265407503020003005>
- Beach, S. R. H., & O'Leary, K. D. (1992). Treating depression in the context of marital discord: Outcome and predictors of response of marital therapy versus cognitive therapy. *Behavior Therapy*, 23, 507–528. [https://doi.org/10.1016/S0005-7894\(05\)80219-9](https://doi.org/10.1016/S0005-7894(05)80219-9)
- Beach, S. R. H., Whisman, M. A., & O'Leary, K. D. (1994). Marital therapy for depression: Theoretical foundation, current status and future directions. *Behavior Therapy*, 25, 345–371. [https://doi.org/10.1016/S0005-7894\(05\)80152-2](https://doi.org/10.1016/S0005-7894(05)80152-2)
- Beauregard, M., Paquette, V., & Levesque, J. (2006). Dysfunction in the neural circuitry of emotional self-regulation in major depressive disorder. *Neuroreport*, 17, 843–846. <https://doi.org/10.1097/01.wnr.0000220132.32091.9f>
- Behrend, T. S., Sharek, D. J., Meade, A. W., & Wiebe, E. N. (2011). The viability of crowdsourcing for survey research. *Behavior Research Methods*, 43, 800–813. <https://doi.org/10.3758/s13428-011-0081-0>
- Bellavia, G. M., & Frone, M. R. (2005). Work–family conflict. In J. Barling, E. K. Kelloway, & M. R. Frone (Eds.), *Handbook of work stress* (pp. 113–147). Thousand Oaks, CA: Sage. <https://doi.org/10.4135/9781412975995.n6>
- Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk. *Political Analysis*, 20, 351–368. <https://doi.org/10.1093/pan/mpr057>
- Brown, D. J., & Keeping, L. M. (2005). Elaborating the construct of transformational leadership: The role of affect. *The Leadership Quarterly*, 16, 245–272. <https://doi.org/10.1016/j.leaqua.2005.01.003>
- Burman, B., & Margolin, G. (1992). Analysis of the association between marital relationships and health problems: an interactional perspective. *Psychological Bulletin*, 112, 39–63. <https://doi.org/10.1037/0033-2909.112.1.39>
- Bushman, B. J. (2002). Does venting anger feed or extinguish the flame? Catharsis, rumination, distraction, anger, and aggressive responding. *Personality and Social Psychology Bulletin*, 28(6), 724–731.
- Byrne, A., Dionisi, A. M., Barling, J., Akers, A., Robertson, J., Lys, R., ... Dupré, K. (2014). The depleted leader: The influence of leaders' diminished psychological resources on leadership behaviors. *The Leadership Quarterly*, 25, 344–357. <https://doi.org/10.1016/j.leaqua.2013.09.003>
- Carlson, D. S., Ferguson, M., Perrewé, P. L., & Whitten, D. (2011). The fall-out from abusive supervision: An examination of subordinates and their partners. *Personnel Psychology*, 64, 937–961. <https://doi.org/10.1111/j.1744-6570.2011.01232.x>
- Carver, C. S., Johnson, S. L., & Joormann, J. (2008). Serotonergic function, two-mode models of self-regulation, and vulnerability to depression: What depression has in common with impulsive aggression. *Psychological Bulletin*, 134, 912–943. <https://doi.org/10.1037/a0013740>
- Chi, S. S., & Liang, S. (2013). When do subordinates' emotion-regulation strategies matter? Abusive supervision, subordinates' emotional exhaustion, and work withdrawal. *The Leadership Quarterly*, 24, 125–137. <https://doi.org/10.1016/j.leaqua.2012.08.006>
- Chwalisz, K., Altmaier, E. M., & Russell, D. W. (1992). Causal attributions, self-efficacy cognitions, and coping with stress. *Journal of Social and Clinical Psychology*, 11, 377–400. <https://doi.org/10.1521/jscp.1992.11.4.377>
- Courtwright, S. H., Gardner, R. G., Smith, T. A., McCormick, B. W., & Colbert, A. E. (2015). My family made me do it: A cross-domain, self-regulatory perspective on antecedents to abusive supervision. *Academy of Management Journal*, 59, 1630–1652.
- Dandurand, F., Shultz, T. R., & Onishi, K. H. (2008). Comparing online and lab methods in a problem-solving experiment. *Behavior Research Methods*, 40, 428–434. <https://doi.org/10.3758/BRM.40.2.428>
- Dedovic, K., Duchesne, A., Andrews, J., Engert, V., & Pruessner, J. C. (2009). The brain and the stress axis: The neural correlates of cortisol regulation in response to stress. *NeuroImage*, 47, 864–871. <https://doi.org/10.1016/j.neuroimage.2009.05.074>
- Demerouti, E., Bakker, A. B., & Bulters, A. J. (2004). The loss spiral of work pressure, work–home interference and exhaustion: Reciprocal relations in a three-wave study. *Journal of Vocational Behavior*, 64, 131–149. [https://doi.org/10.1016/S0001-8791\(03\)00030-7](https://doi.org/10.1016/S0001-8791(03)00030-7)
- DeWall, C. N., Baumeister, R. F., Stillman, T. F., & Gailliot, M. T. (2007). Violence restrained: Effects of self-regulation and its depletion on aggression. *Journal of Experimental Social Psychology*, 43, 62–76. <https://doi.org/10.1016/j.jesp.2005.12.005>
- Dionisi, A. M., & Barling, J. (2015). Spillover and crossover of sex-based harassment from work to home: Supervisor gender harassment affects romantic relationship functioning via targets' anger. *Journal of Organizational Behavior*, 36, 196–215. <https://doi.org/10.1002/job.1969>
- Dormann, C., & Griffin, M. A. (2015). Optimal time lags in panel studies. *Psychological Methods*, 20, 489–505. <https://doi.org/10.1037/met0000041>
- Fincham, F. D. (2003). Marital conflict: Correlates, structure and context. *Current Directions in Psychological Science*, 12, 23–27. <https://doi.org/10.1111/1467-8721.01215>

- Fowers, B. J., Laurenceau, J.-P., Penfield, R. D., Cohen, L. M., Lang, S. F., Owenz, M. B., & Pasipandoya, E. (2016). Enhancing relationship quality measurement: The development of the Relationship Flourishing Questionnaire. *Journal of Family Psychology, 30*, 997–1007. <https://doi.org/10.1037/fam0000263>
- Frone, M. R. (2000). Work–family conflict and employee psychiatric disorders: The National Comorbidity Survey. *Journal of Applied Psychology, 85*, 888–895. <https://doi.org/10.1037/0021-9010.85.6.888>
- Frone, M. R., Russell, M., & Cooper, M. L. (1997). Relation of work–family conflict to health outcomes: A four-year longitudinal study of employed parents. *Journal of Occupational and Organizational Psychology, 70*, 325–335. <https://doi.org/10.1111/j.2044-8325.1997.tb00652.x>
- Fryer, D., & Warr, P. B. (1984). Unemployment and cognitive difficulties. *British Journal of Clinical Psychology, 23*, 67–68. <https://doi.org/10.1111/j.2044-8260.1984.tb00629.x>
- Grandey, A. A., & Cropanzano, R. (1999). The conservation of resources model applied to work–family conflict and strain. *Journal of Vocational Behavior, 54*, 350–370. <https://doi.org/10.1006/jvbe.1998.1666>
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review, 10*, 76–88. <https://doi.org/10.5465/amr.1985.4277352>
- Grych, J. H., Jouriles, E. N., Swank, P. R., McDonald, R., & Norwood, W. D. (2000). Patterns of adjustment among children of battered women. *Journal of Consulting and Clinical Psychology, 68*, 84–94. <https://doi.org/10.1037/0022-006X.68.1.84>
- Grych, J. H., Seid, M., & Fincham, F. D. (1992). Assessing marital conflict from the child's perspective: The Children's Perception of Interparental Conflict Scale. *Child Development, 64*, 558–572.
- Grzywacz, J. G., & Butler, A. B. (2008). Work–family conflict. In J. Barling, & C. L. Cooper (Eds.), *Handbook of organizational behavior vol 1: Micro-approaches* (pp. 451–468). NY: Sage Publications. <https://doi.org/10.4135/9781849200448.n25>
- Halbesleben, J. R. B. (2006). Sources of social support and burnout: A meta-analytic test of the conservation of resources model. *Journal of Applied Psychology, 91*, 1134–1145. <https://doi.org/10.1037/0021-9010.91.5.1134>
- Harold, C. M., & Holtz, B. C. (2015). The effects of passive leadership on workplace incivility. *Journal of Organizational Behavior, 36*, 16–38. <https://doi.org/10.1002/job.1926>
- Hayes, A. F. (2018). *Introduction to mediation, moderation and conditional process analysis*. NY: Guilford Press.
- Hinkin, T. R., & Schriesheim, C. A. (2008). An examination of “nonleadership”: From laissez-faire leadership to leader reward omission and punishment omission. *Journal of Applied Psychology, 93*, 1234–1248. <https://doi.org/10.1037/a0012875>
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*, 513–524. <https://doi.org/10.1037/0003-066X.44.3.513>
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review, 50*, 337–370.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*, 307–324. <https://doi.org/10.1037/1089-2680.6.4.307>
- Holden, C. J., Dennie, T., & Hicks, A. D. (2013). Assessing the reliability of the M5-120 on Amazon's Mechanical Turk. *Computers in Human Behavior, 29*, 1749–1754. <https://doi.org/10.1016/j.chb.2013.02.020>
- Hoobler, J. M., & Hu, J. (2013). A model of injustice, abusive supervision, and negative affect. *The Leadership Quarterly, 24*, 256–269. <https://doi.org/10.1016/j.leaqua.2012.11.005>
- Horton, J. J., Rand, D. G., & Zeckhauser, R. J. (2011). The online laboratory: Conducting experiments in a real labor market. *Experimental Economics, 14*, 399–425. <https://doi.org/10.1007/s10683-011-9273-9>
- Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology, 89*, 755–768. <https://doi.org/10.1037/0021-9010.89.5.755>
- Kavanagh, D. (2014). Self-efficacy and depression. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action* (pp. 177–194). Washington, DC: Hemisphere.
- Kelloway, E. K., Mullen, J., & Francis, L. (2006). Divergent effects of transformational and passive leadership on employee safety. *Journal of Occupational Health Psychology, 11*, 76–86. <https://doi.org/10.1037/1076-8998.11.1.76>
- Kiazad, K., Restubog, S. L. D., Zagenczyk, T. J., Kiewitz, C., & Tang, R. L. (2010). In pursuit of power: The role of authoritarian leadership in the relationship between supervisors' Machiavellianism and subordinates' perceptions of abusive supervisory behavior. *Journal of Research in Personality, 44*, 512–519. <https://doi.org/10.1016/j.jrp.2010.06.004>
- Kiewitz, C., Restubog, S. L. D., Zagenczyk, T. J., Schott, K. D., Garcia, P. R. J. M., & Tang, R. L. (2012). Sins of the parents: Self-control as a buffer between supervisors' previous experience of family undermining and subordinates' perceptions of abusive supervision. *The Leadership Quarterly, 23*, 869–882. <https://doi.org/10.1016/j.leaqua.2012.05.005>
- Lallukka, T., Arber, S., Laaksonen, M., Lahelma, E., Partonen, T., & Rahkonen, O. (2013). Work–family conflicts and subsequent sleep medication among women and men: A longitudinal registry linkage study. *Social Science and Medicine, 79*, 66–75. <https://doi.org/10.1016/j.socscimed.2012.05.011>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- LeBlanc, M., Barling, J., & Turner, N. (2014). Intimate partner aggression and women's work outcomes. *Journal of Occupational Health Psychology, 19*, 399–412. <https://doi.org/10.1037/a0037184>
- Livingston, B. A., & Judge, T. A. (2008). Emotional responses to work–family conflict: An examination of gender role orientation among working men and women. *Journal of Applied Psychology, 93*, 207–216. <https://doi.org/10.1037/0021-9010.93.1.207>
- Luthans, F., Peterson, S. J., & Ibrayeva, E. (1998). The potential for the “dark side” of leadership in post communist countries. *Journal of World Business, 33*, 185–201. [https://doi.org/10.1016/S1090-9516\(98\)90005-0](https://doi.org/10.1016/S1090-9516(98)90005-0)
- Lyubomirsky, S., Kasri, F., & Zehm, K. (2003). Dysphoric rumination impairs concentration on academic tasks. *Cognitive Therapy and Research, 27*(309), 330.
- MacEwen, K. E., & Barling, J. (1991). Maternal employment experiences affect children's behaviour via mood, cognitive difficulties and parenting behavior. *Journal of Marriage and the Family, 53*, 635–644. <https://doi.org/10.2307/352739>
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the produce and resampling methods. *Multivariate Behavioral Research, 39*, 99–128. https://doi.org/10.1207/s15327906mbr3901_4
- Murphy, C. M., & O'Farrell, T. J. (1994). Factors associated with marital aggression in male alcoholics. *Journal of Family Psychology, 8*, 321–335. <https://doi.org/10.1037/0893-3200.8.3.321>

- Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Development and validation of work-family and family-work conflict scales. *Journal of Applied Psychology, 81*, 400-410. <https://doi.org/10.1037/0021-9010.81.4.400>
- Parasuraman, S., Greenhaus, J. H., & Granrose, C. S. (1992). Role stressors, social support, and well being among two career couples. *Journal of Organizational Behavior, 13*, 339-356. <https://doi.org/10.1002/job.4030130403>
- Posig, M., & Kickul, J. (2004). Work-role expectations and work family conflict: Gender differences in emotional exhaustion. *Women in Management Review, 19*, 373-386. <https://doi.org/10.1108/09649420410563430>
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401. <https://doi.org/10.1177/014662167700100306>
- Randall, A. K., & Bodenmann, G. (2009). The role of stress on close relationships and marital satisfaction. *Clinical Psychology Review, 29*, 105-115. <https://doi.org/10.1016/j.cpr.2008.10.004>
- Rizzo, J. R., House, R. J., & Lirtzman, S. J. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly, 15*, 150-163. <https://doi.org/10.2307/2391486>
- Rothbard, N. P. (2001). Enriching or depleting? The dynamics of engagement in work and family roles. *Administrative Science Quarterly, 46*, 655-684. <https://doi.org/10.2307/3094827>
- Rubinstein, J. S., Meyer, D. E., & Evans, J. E. (2001). Executive control of cognitive processes in task switching. *Journal of Experimental Psychological Inquiry, 11*, 319-338.
- Sanz-Vergel, A. I., Rodríguez-Munoz, A., & Nielsen, K. (2015). The thin line between work and home: The spillover and crossover of daily conflicts. *Journal of Occupational and Organizational Psychology, 88*, 1-18.
- Schaumberg, R. L., & Flynn, F. J. (2012). Uneasy lies the head that wears the crown: The link between guilt proneness and leadership. *Journal of Personality and Social Psychology, 103*, 327-342. <https://doi.org/10.1037/a0028127>
- Schleider, J. L., & Weisz, J. R. (2015). Using mechanical Turk to study family processes and youth mental health: A test of feasibility. *Journal of Child and Family Studies, 24*, 3235-3246. <https://doi.org/10.1007/s10826-015-0126-6>
- Schmaling, K. B., & Sher, T. G. (1997). Physical health and relationships. In W. K. Halford, & H. J. Markman (Eds.), *Clinical handbook of marriage and couples interventions* (pp. 323-345). Hoboken, NJ: John Wiley & Sons Inc.
- Sheehan, K. B. (2018). Crowdsourcing research: Data collection with Amazon's Mechanical Turk. *Communication Monographs, 85*, 140-156. <https://doi.org/10.1080/03637751.2017.1342043>
- Skogstad, A., Einarsen, S., Torsheim, T., Aasland, M. S., & Hetland, H. (2007). The destructiveness of laissez-faire leadership. *Journal of Occupational Health Psychology, 12*, 80-92. <https://doi.org/10.1037/1076-8998.12.1.80>
- Strauman, T. J. (2002). Self-regulation and depression. *Self and Identity, 1*, 151-157. <https://doi.org/10.1080/152988602317319339>
- ten Brummelhuis, L. L., & Bakker, A. B. (2012). A resource perspective on the work-home interface: The work-home resources model. *American Psychologist, 67*, 545-556. <https://doi.org/10.1037/a0027974>
- ten Brummelhuis, L. L., Haar, J. M., & Roche, M. (2014). Does family life help to be a better leader? A closer look at crossover processes from leaders to followers. *Personnel Psychology, 67*, 917-949. <https://doi.org/10.1111/peps.12057>
- Tepper, B. J. (2000). Consequences of abusive supervision. *Academy of Management Journal, 43*, 178-190.
- Tepper, B. J., Simon, L., & Park, H. M. (2017). Abusive supervision. *Annual Review of Organizational Psychology and Organizational Behavior, 4*, 123-152. <https://doi.org/10.1146/annurev-orgpsych-041015-062539>
- Wettersten, K. B., Rudolph, S. E., Faul, K., Gallagher, K., Trangsrud, H. B., Adams, K., ... Terrance, C. (2004). Freedom through self-sufficiency: A qualitative examination of the impact of domestic violence on the working lives of women in shelter. *Journal of Counseling Psychology, 51*, 447-462. <https://doi.org/10.1037/0022-0167.51.4.447>
- Wood, J. V., Saltzberg, J. A., & Goldsamt, L. A. (1990). Does affect induce self-focused behavior? *Journal of Personality and Social Psychology, 58*, 899-908. <https://doi.org/10.1037/0022-3514.58.5.899>
- Yam, K. C., Fehr, R., Keng-Highberger, F. T., Klotz, A. C., & Reynolds, S. J. (2016). Out of control: A self-control perspective on the link between surface acting and abusive supervision. *Journal of Applied Psychology, 101*, 292-301. <https://doi.org/10.1037/apl0000043>
- Zacchilli, T. L., Hendrick, C., & Hendrick, S. S. (2009). The romantic partner conflict scale: A new scale to measure relationship conflict. *Journal of Social and Personal Relationships, 26*, 1073-1096. <https://doi.org/10.1177/0265407509347936>
- Zilioli, S., Imami, L., & Slatcher, R. B. (2016). The impact of negative family-to-work conflict on diurnal cortisol. *Health Psychology, 35*, 1164-1167. <https://doi.org/10.1037/hea0000380>

How to cite this article: Dionisi AM, Barling J. What happens at home does not stay at home: The role of family and romantic partner conflict in destructive leadership. *Stress and Health*. 2019;35:304-317. <https://doi.org/10.1002/smi.2858>