

Killing me softly: Electronic communications monitoring and employee and significant other well-being

Abstract

This paper tests the relationship between organizational expectations to monitor work-related electronic communication during nonwork hours and the health and relationship satisfaction of employees and their significant others. We apply resource-based theories (i.e., conservation of resources and resource allocation) to propose that organizational expectations for email monitoring (OEEM) during nonwork time is a psychological stressor that elicits employee anxiety due to a resource allocation conflict. In turn, employee anxiety negatively impacts employee and their significant other's health and relationship quality. We conducted two studies to test our propositions. Using the experience sampling method with 108 working U.S. adults, Study 1 established within employee effects of OEEM on anxiety and employee health and relationship conflict. Study 2, using a sample of 138 dyads of full time employees and their significant others, replicated detrimental health and relationship effects of OEEM through anxiety, as well as demonstrated crossover effects of electronic communication expectations on partner health and relationship satisfaction. Further, Study 2 substantiated our OEEM construct using 105 employee-manager matched dyads. Our findings extend the literature on work-related electronic communication at the interface of work and nonwork, as well as deepening our understanding of the impact of organizational expectations on employees and their families' health and well-being.

Keywords: Electronic Communication; Conservation of Resources, Boundary Theory; Anxiety; Health; Crossover Effects

KILLING ME SOFTLY: ELECTRONIC COMMUNICATIONS MONITORING AND EMPLOYEE AND SIGNIFICANT OTHER WELL-BEING

In recent decades, the nature of work in the modern world has seen a number of trends that increasingly challenge employees' ability to balance the demands of their work and nonwork lives (Greenhaus & Kossek, 2014; Demerouti, Derks, Lieke, & Bakker, 2014; Kurtzberg & Gibbs, 2017). For one, individuals are putting in longer hours at work while also being asked to step up their productivity and efficiency (Burke & Cooper, 2008). For another, professional work is becoming increasingly knowledge-oriented and more readily spills over to nonwork environments (Gajendran & Harrison, 2007). In conjunction with this, the explosion of the internet has fueled the proliferation of electronic devices, creating an always-on, connected society (Mazmanian, Orlikowski & Yates., 2013; Turel, Serenko, & Bontis, 2011; Weber, 2004) that has intensified normative expectations in many organizations for employee availability after hours. As a result, the permeability of the boundaries between work and nonwork activities has increased substantially, drastically altering the nature of social and family ecosystems and the work-family interface (Allen, Cho, & Meier, 2014). Employees increasingly struggle to satisfy competing work and nonwork demands throughout their waking hours, potentially increasing anxiety. Indeed, polls of working U.S. adults in the last couple of years consistently indicate a steep rise in levels of anxiety among employees in all aspects of their lives (American Psychiatric Association, 2018), with over 40% of employees reporting experiencing work-related anxiety (American Psychological Association, 2012).

Even though research in social and clinical psychology has demonstrated detrimental effects of stress, specifically exposure to chronic stress, and anxiety on individual health and well-being for over four decades, organizational research that examines work-triggered anxiety

has mostly lagged behind (for a systematic review of the literature on work-related stress, see Ganster & Rosen, 2013). However, recent changes in the work environment (e.g., increased domestic and international competition, proliferation of mobile technology), has prompted organizational scholars to turn their attention to the impact of job stressors and specifically, work-related anxiety, on employee behavior and performance. For instance, emergent research within the organizational domain has demonstrated that anxiety can lead to reduced job performance (McCarthy Trougakos, & Cheng, 2016), decreased job satisfaction, job withdrawal (Boyd, Lewin, & Sager, 2009) and increased unethical behavior (Kouchaki & Desai, 2015).

In this study, we add to this growing literature by establishing a direct link between organizational expectations for availability, as manifested through work email monitoring during nonwork hours, and employee anxiety. We aim to demonstrate that these expectations negatively impact employee health and well-being, and have crossover effects on significant other's health and well-being through email-related anxiety. In order to do so, we analyze organizational expectations for email monitoring (OEEM) during nonwork time using a resource-based perspective. Specifically, applying conservation of resources and resource allocation theory (Hobfoll, 1989; Hobfoll, Halbesleben, Neveu & Westman, 2018), we propose that the competing demands of work and nonwork lives present a pervasive resource allocation dilemma for employees, which trigger feelings of anxiety and negatively impacts personal well-being and relationship quality. We further draw on research on stress and anxiety to propose and empirically validate OEEM as a common and ominous modern-day job stressor that is detrimental to employee and their significant other's health.

Our study makes several contributions to the management literature. First, we extend research within resource-based theories of stress, such as job-demands-resources model (JD-R)

(Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) and conservation of resources (Hobfoll et al., 2018) by conceptualizing and empirically testing a new psychological stressor – OEEM. While the JD-R model acknowledges increased job demands as a stressor that intensifies strain and relationship conflict due to one’s inability to fulfill nonwork roles while engaging in work-related activity, such as when someone brings work home to finish up (Bakker, Demerouti & Dollard, 2008), we demonstrate that detrimental effects of workload do not necessarily manifest through physical time spent on work (e.g., Piszczek, 2017). We further argue that regardless of the actual involvement with work, salient norms for availability increase employee and their significant others’ strain, even when employees do not engage in actual work during nonwork time (Belkin, Becker & Conroy, 2016). Thus, we depict normative expectations for work email monitoring during nonwork hours as a stressor above and beyond actual workload and time spent on handling it during nonwork hours.

We also add specifically to conservation of resources and resource allocation theory (Hobfoll, 1989; Hobfoll et al., 2018) by explicating anxiety as a direct outcome of stress-generating resource conflict and depletion via OEEM. That is, by separating stress, a process initiated by a stressor, from anxiety, one’s response to a stressor via strain, and focusing on one particular type of stress that leads to strain – chronic stress created by OEEM, we refine the rather general description of stressors in conservation of resource and resource allocation theories and invite scholars to further study the differential impact of these stressors in individual perceptions and behaviors. Moreover, we expand upon this literature by testing the effects of resource loss via resource allocation dilemma not only on the focal employee, but also explore its sinister interpersonal effects on the employee’s relationship partner. Thereby, extending previous research by focusing on both intrapersonal and interpersonal effects of resource allocation strain

on health and well-being.

Second, our findings inform the boundary theory literature and extend research on the work-family interface by documenting how work-nonwork boundary permeability, as a result of OEEM, impacts individual and family outcomes. We investigate not only employee well-being outcomes, but also crossover effects of “flexible” boundaries on employee significant other’s physical and psychological health. Unlike other work-related demands that directly deplete individual employee physical and psychological resources, often by requiring time away from personal pursuits, the insidious impact of an “always on” organizational culture is seemingly unaccounted for or disguised as a benefit (e.g., increased convenience or higher autonomy and control over work-life boundaries – e.g., Maertz & Boyar, 2011; Mazmanian et al., 2013). However, our research exposes that in reality “flexible work boundaries” often turn into “work without boundaries”, compromising an employee’s and their family’s health and well-being. In addition, by focusing on the role of emotional impact (i.e., anxiety) on individual role enactment and subsequent well-being outcomes, we extend beyond the predominantly cognitive approach to work-nonwork roles transitions in the boundary theory literature (Allen et al., 2014; Ashforth, Kreiner & Fugate, 2000; Kreiner, Hollensbe & Sheep, 2009)

Finally, this study is the first (to our knowledge) to test the objectivity of the OEEM phenomenon as a psychological stressor. That is, in this research we explore whether subjective employee perceptions regarding organizational expectations for work-related email monitoring are consistent with actual managerial expectations for employee availability. Even though subjective perceptions are a strong motivator of behavior, they may vary by individual due to differences in individual cognitive styles or prior experiences (Ganster & Rosen, 2013).

Accordingly, validating the degree of association between managerial and employee perceptions is an important step in measurement and use of OEEM as a research construct.

ORGANIZATIONAL EMAIL-RELATED EXPECTATIONS AND A WORK-NONWORK RESOURCE ALLOCATION DILEMMA

Boundary theory asserts that individuals tend to draw boundaries around different areas of their lives, such as family, work, or social domains in order to efficiently enact and maintain the required roles and responsibilities in each area (Ashforth, et al., 2000; Kreiner et al., 2009). Each domain carries a differential role identity – i.e., self-definition associated with roles, such as parent, worker, or friend (Ashforth, 2001). Fulfilling each role requires effort and resources to achieve identity enactment, such that individuals tend to establish and maintain physical and psychological boundaries between domains to maximize resources and segregate successes and failures across domains (Kreiner et al., 2009; Nippert-Eng, 2008). However, with the shrinking degree of physical boundaries between the work and nonwork facets of life, employees increasingly rely on *psychological* boundaries to establish distinctions between domains (Demerouti et al., 2014; Wajcman, Bittman, & Brown, 2008).

Organizations also use less concrete forms of boundary control to enforce and expand work domain boundaries during working and nonworking hours (Perlow, 1998). For instance, electronic communications have evolved as an effective and widespread form of organizational boundary control. Indeed, it may be appealing for organizations to endorse increasing expectations to monitor electronic communications beyond what is necessary, since constant connectivity allows for greater productivity and has a seemingly innocuous impact on employees during nonwork hours (Derks, van Duin, Tims, & Bakker, 2015; Stanko & Beckman, 2015). Since the widespread ownership of personal electronic devices allows work electronic communications to permeate the nonwork boundary with impunity at all hours of the day and

without regard for time off (Demerouti et al., 2014; Wajcman et al., 2008; Weber, 2004), monitoring organizational electronic communication during nonwork hours can be considered a fundamental trigger of resource allocation dilemma between work and nonwork domains.

Conservation of Resources and Resource Allocation Theory

Conservation of resources (COR) theory was proposed by Hobfoll (1989) as a motivational stress theory, which main premise is that individuals are fundamentally motivated to build and maintain individual resources and protect themselves from resource losses. Resources are broadly defined in COR as objects, energies, or conditions (Halbesleben, Neve, Pastian-Underdahl & Westman, 2014; Hobfoll et al., 2018). The more resources one has, the more one feels in control, while resource expenditures create stress. An important assumption of this theory is that resources are limited and prolonged resource loss leads to resource spirals and depletion at a faster rate. It also acknowledges that cognitive resources, like attention, are less fungible than other resources but still have limits and must be selectively allocated (Harrison & Wagner, 2016). Additionally, COR proposes that individuals will generally incur resource loss through resource allocation if they expect that this investment will help them to achieve their goal or obtain resources they need or value more (e.g., exerting extra effort for the work project to get a promotion or spending additional time listening and comforting a significant other to maintain valuable relationship) (Halbesleben et al., 2014).

From a resource conservation theory perspective, drawing boundaries across domains also allows individuals to maximize resource gain and minimize resource loss by allowing individuals to detach and recuperate from work-related problems during nonwork time or detach from family-related issues at work (Sonnetag & Fritz, 2015). In general, people establish personal relationships with a significant other to establish a reliable resource partner, who can

provide a buffer against the demands and challenges of their work and nonwork lives (Bodenmann, 2005; Burpee & Langer, 2005). However, in the modern world of dual-earning couples and OEEM, we contend that these resource sharing relationships and their inherent benefits can be systematically undermined (Harrison & Wagner, 2016).

Anxiety as a response to OEEM-triggered resource allocation dilemma. Since individual resources are limited, simultaneous demands of one's cognitive resources and energies (i.e., time and effort) intensify stress and increase strain on an individual, as a resource investment in one domain means shrinking resource pool and less resources for investment or resource conservation in other domains (Hobfoll et al., 2018). One of the most cherished resources in significant other relationships is attention (Burpee & Langer, 2005). When OEEM are high, an employee needs to invest attention to work while in the nonwork domain, presenting a dilemma with respect to their resource investment in the relationship; thereby threatening goal achievement in the nonwork domain and eliciting subsequent negative affective responses, such as feelings of worry, tension and lack of control.

Affective reactions embody explicit and implicit responses to encountered environmental stimuli and provide a barometer for the world around them (Damasio, Everitt, & Bishop, 1996). Affect often represents unconscious informational input to the cognitive system for making sense of the environment and coping with threats (Clore, Gasper & Garvin, 2001; Elfenbein, 2007; Isen, 1990; Schwarz & Clore, 1983). Anxiety is an "aversive emotional and motivational state occurring in threatening circumstances" (Eysenck, Derakshan, Santos, & Calvo, 2007:336). It is a body response to stress that is characterized by feelings of tension and hyperarousal (Watson, 2000). Anxiety typically arises when individual goals are hindered and uncertainty about the outcome is high (Lazarus, 1991) and thus, one is motivated to resolve it. Accordingly, when one

is faced with a resource investment dilemma between work and nonwork roles, anxiety should be the first automatic emotional response to the conflict or tension between the two domains. For example, an employee may go for a nice dinner with his or her spouse and make small talk, but not be able to engage in deeper conversation because he or she is frequently thinking about or checking their smartphone, anxious about whether there are any new emails from work. In turn, this distraction prevents the sustained attention necessary for relational mindfulness, which also may contribute to anxiety that one is failing in a nonwork domain.

Additionally, OEEM can be a constant source of anxiety by sheer overstimulation of the work-self due to email monitoring frequency. Individuals may become anxious for two main reasons. One, they may feel they are not fulfilling nonwork roles because they are investing their attention on work-related matters during nonwork time. Two, constant email monitoring may intensify negative thoughts and worry that they are behind on some goal-driven tasks every time they check their email. That is, anxiety does not only arise as a response to stress of resource allocation dilemma between work and nonwork domains, but may also be perpetuated by email monitoring behavior. The failure to achieve desired goals in one or both domains intensifies perception of threat and thus, feelings of anxiety.

Hypothesis 1: Organizational expectations for email monitoring during nonwork time will be positively related to employee anxiety.

The effects of OEEM-triggered anxiety on employee health and marital satisfaction.

We further argue that employee affective reactions to OEEM, namely, anxiety, is a key mechanism leading to the detrimental effects for individual well-being. OEEM can be a fundamental trigger of chronic stress, minor day-to-day stressors or stressful events that accumulate over prolonged period of time (McEwen, 1998), as there is no definitive resolution for the resource investment dilemma. That is, the mere expectation of constant availability means

that one's cognitive resources are always in the "on" mode during nonwork hours. Unlike instances when an employee can deal with work overload by investing resources to accomplish a task and then mentally and physically disengage and focus on nonwork domain, OEEM is ever-present and can lead to emotional and mental resource depletion (Belkin et al. 2016). At the same time, the less one invests attention in nonwork domain activities the more one loses control of it. Accordingly, feelings of worry, tension and apprehension towards work induced by electronic communication expectations should spillover to nonwork domains (Krannitz, Grandey, Liu, & Almeida, 2015; Wagner, Barnes & Scott, 2013) and the unresolved tension may negatively impact well-being because the individual is unable to resolve the dilemma. Over time, the associated psychological and physiological distress can also negatively impact employee health. The relationship between chronic stress, anxiety and health outcomes is relatively well established, demonstrating its link to poor physical and mental health and premature mortality (e.g., Keller, Litzelman, Wisk, Maddox, Cheng, Creswell, & Witt, 2012; McEwen, 2017; McEwen & Stellar, 1993; Watson & Pennebaker, 1989); thus, we anticipate that high OEEM will negatively impact employee health both directly and through OEEM-related anxiety.

Moreover, experiences of anxiety as an outcome of resource-allocation dilemmas may be misattributed to one's significant other, potentially leading to increases in spousal conflict and endangering one's marriage or partnership (Kossek, Ruderman, Braddy & Hannum, 2012). Furthermore, with high monitoring expectations, the individual may become locked into their work domain schemas, which may not be well suited for deeply enacting their nonwork domain roles (Shumate & Fulk, 2004). For example, if one's work requires them to be dominant and psychologically distant, this would make it very difficult to enact the role of caring and flexible relationship partner. As argued above, failure to enact required roles may intensify feelings of

anxiety (Ilies, Schwind, Wagner, Johnson, DeRue, & Ilgen, 2007) and may prevent individuals from engagement in social or family interactions. Therefore, we expect employee relationship satisfaction to be hindered by OEEM both directly and indirectly through anxiety. Supporting this logic, meta-analytic results have found significant relationships between work-family conflict and relationship satisfaction and health problems (Amstad, Meier, Fasal, Elfering & Semmer, 2011; also for a review see Randal & Bodenmann, 2009). We add to this literature by proposing that OEEM represents a new antecedent of strain, creating anxiety through a powerful and pervasive omnipresence that leads to feelings of lack of control and inability to successfully resolve resource allocation conflicts over time. This “allostatic load” – a chronic wear due to a prolonged exposure to minor stressors (McEwan & Stellar, 1993; McEwan, 2017) – should have detrimental effects on individual marital relationships and general health.

Hypothesis 2: Work email triggered anxiety will mediate the relationship between organizational expectations for email monitoring during non-work time and (a) employee health and (b) employee marital relationship quality.

Crossover within the nonwork domain. Employee email-related anxiety is likely to be observed by and directly affect significant others, a concept known as crossover effects (Chesley, 2005; Song, Foo, & Uy, 2008; Westman, 2001; 2005). For instance, in their study of 113 dual-earner couples, Matthews and colleagues (2006) found that partners accurately perceived their partner’s level of work-family conflict, which correlated positively with their own perception of conflict and relationship tension (Matthews, Del Priore, Acitelli, & Barnes-Farrel, 2006). Moreover, the fact that employees break nonwork normative expectations by engaging in work-related activities while home creates tension for their spouse or significant other. The employees’ anxiety combined with the lack of relational mindfulness in dyadic interactions due to allocating attention to the work-related domain may lead to a contagion effects whereby the employee’s

partner will begin to experience anxiety regarding the employee's electronic communications habits as well. That is, sensing anxiety from the employee and/or experiencing anxiety as a result of the employee's work-related resource allocation and lack of relationship engagement should facilitate contagion effects, where the employee's anxiety in the nonwork domain can be "caught" by their significant others (Barsade, 2002; Boyar, Maertz, Pearson, & Keough, 2003). Thus, significant other's anxiety should be positively related to those of their partner.

The chronic tension and anxiety in both partners should also impact the significant other's relationship quality and health. Since the significant other is even more powerless than an employee to take direct action to resolve feelings of anxiety, the constant strain should negatively impact significant other's health. Furthermore, indirect attempts to address the underlying issue may increase conflict within the relationship and increase stress on both individuals in the short term. Therefore, we propose that anxiety created by OEEM should have significant damaging implications for the health and relationship satisfaction of both partners rather than simply the focal employee (Chesley, 2005).

Hypothesis 3: Work email triggered anxiety will have crossover effects on the anxiety of significant others.

Hypothesis 4: Work email-triggered employee and significant other anxiety will mediate the relationship between organizational expectations to monitor electronic communications and significant other (a) health and (b) relationship quality.

STUDY 1

Methods

Participants and Procedure. We first tested our individual predictions using an experience sampling study of working adults from a variety of industries and organizations in the U.S. We recruited 182 participants from evening MBA students enrolled in a U.S. University and working adults from the authors' personal networks. All participants worked at least 30 hours per

week. All but 4 were married or in a committed relationship and currently living with their spouse/partner. Participants were sent surveys over the course of 4 consecutive days (Saturday and Sunday were considered as one day). The initial survey included demographic variables as well as the experience sampling variables, while the subsequent surveys only included experience sampling variables. The final sample included 108 individuals and 376 experience sampling measurements. The employee participants spanned a variety of industry groups, including technology (17%), healthcare (14%), and government (11%). The employee sample was 50% male and the median age range reported was 31-35 years.

Measures

Individual-level variables. *Organizational expectations for email monitoring* outside of work (OEEM) was measured with two items adapted from Venkatesh and Davis (2000) and a third item taken from Butts, Becker and Boswell (2015). A sample item was, “People who influence my behavior at work think that I should monitor electronic communications away from work”. Responses were on a five-point Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). *Gender* (1 = Male) was included as a control for all dependent variables because it has been associated with management of the work-life interface (e.g., Boswell & Olson-Buchanan, 2007; Matthews et al., 2006). Gender was retained in the model even though it did not have any significant effects and the results held without it. The descriptive statistics for the study variables are displayed in Table 1.

Day-level variables. Participants were instructed to answer the questions on a daily survey at the end of each day or before the start of the next workday. Because we used a within-person design which gives us the ability to measure day-level effects of email during nonwork time, we included a day-level variable to represent an employee’s response to OEEM.

Specifically, we assessed *work electronic communication monitoring frequency* during nonwork time using a single item measure, “How frequently did you check work communications during nonwork time today?” Responses were on a five-point Likert scale ranging from 1 (“never”) to 5 (“every few minutes”). We also assessed *time* spent on work electronic communication during nonwork time to control for time spent on email which is a different concept than OEEM and email monitoring frequency (Belkin et al., 2016). Time was measured using a single item measure, “How many minutes did you spend dealing with work-related electronic communications during nonwork time today?” and included as a control variable in our analysis. Responses were on a continuous slider ranging from 1 to 240 minutes. *Work email-triggered anxiety* during nonwork time was measured using a three-item scale. We used three items (tense, nervous, and anxious) to capture feelings of anxiety from the STAI short form (Marteau & Bekker, 1992). The stem for the measure was “Please indicate the extent to which you felt the following today when dealing with work-related electronic communication outside of work”. Responses were reported on a five-point Likert scale ranging from 1 (“not at all”) to 5 (“very much”).

Health was measured using a single item (Meng, Xie, & Zhang, 2014), “Please choose one point on the 100-point scale below that best represents your overall health today.” using a sliding scale with 0 being worst and 100 best. In order to assess *relationship quality* at the day level, we assessed the amount of conflict with their significant other experienced by the employee that day, using a single item adapted from (Barry, Willingham and Thayer (2000). “How much conflict did you have with your significant other today?” Responses were reported on a five-point Likert scale ranging from 1 (“none at all”) to 5 (“a great deal”). The descriptive statistics for the study 1 variables are displayed in Table 1.

Insert Table 1 About Here

Results

All multi-item study variables had reliabilities that were acceptable for research purposes. Our experience sampling data contained a multilevel structure in which daily observations were nested within individuals. To appropriately test our hypotheses, we used multilevel modeling with HLM. Our analyses included OEEM and gender at Level 2 and daily independent and outcome variables at Level 1. OEEM was grand-mean centered while Level 1 independent variables were group-mean centered to render cross-level variables statistically independent of each other (Enders & Tofghi, 2007). Gender was not centered, because it was a categorical variable with specific meaning and no cross-level interactions were included in the analyses. The HLM results for study 1 are displayed in Table 2.

Insert Table 2 About Here

Hypothesis testing. Hypothesis 1 predicted that OEEM during nonwork time would be positively related to anxiety regarding work electronic communications. Model 1 of Table 2 shows that the relationship between expectations and anxiety was significant and in the expected direction ($\beta = .22, p < .01$). The nature of our experience sampling data also allowed us to investigate the day-level variable of monitoring frequency. Model 1 of Table 2 shows that the relationship between fluctuations in daily monitoring frequency ($\beta = .23, p < .01$) was also significantly related with within-person anxiety. Therefore Hypothesis 1 was supported.

Hypothesis 2 predicted that the effects of expectations on (a) health and (b) relationship quality would be mediated by indirect effects through anxiety. Model 2 of Table 2 indicates significant direct effects for OEEM ($\beta = -2.79, p < .01$) and within person anxiety ($\beta = -2.67, p <$

.05) with health. We tested the indirect effect of OEEM and monitoring frequency on health with Togfghi and MacKinnon's (2011) distribution-of-products method using RMediation. We first tested the 2-1-1 indirect effect of OEEM and found that it was significant (95% CI = -1.07, -.18). We also found that the indirect effect of monitoring frequency through anxiety was significant (95% CI = -1.17, -.17); that is, using monitoring frequency as a day-level measure of OEEM, we found that it significantly and negatively affected individual health through anxiety. Therefore, Hypothesis 2a was supported. It is also worth noting that given the direct effect of OEEM the total effect of OEEM on health was substantial.

With regards to Hypothesis 2b, we measured daily conflict with a significant other as a day-level measure of relationship quality. Model 3 of Table 2 found significant direct effects for OEEM ($\beta = .15, p < .01$) and anxiety ($\beta = .15, p < .05$) with significant other relationship conflict. RMediation indicated that the indirect effects of both OEEM (95% CI = .01, .06) and within-person monitoring frequency (95% CI = .01, .07) on daily conflict with significant other through anxiety were significant. As a result, Hypothesis 2b was also supported. Once again, the total negative effect of expectations on relationship quality was quite strong.

Study 1 Discussion

Study 1 provides strong initial support for our predicted relationships between OEEM and feelings of anxiety and employee well-being. The strength of this study lies in the ability of experience sampling to demonstrate these effects within individual employees over a short period of time. The findings suggest that while the omnipresent specter of organizational expectations have a consistent negative effect on well-being, daily fluctuations in monitoring and anxiety also influence well-being and personal relationship quality.

However, Study 1 was not well-suited to investigate our predictions of crossover effects between employees and their significant others; thus, we conducted another study to replicate our initial findings and test our remaining research questions. Study 2 had three main goals: (1) to confirm the between-person effects of OEEM on employee anxiety, general health and relationship satisfaction observed in Study 1 with a new sample of employees; (2) to examine the potential crossover effects of employee anxiety as a result of OEEM on their spouses' anxiety and well-being and (3) to validate the subjective employee email-related expectations construct by collecting the data from their managers with respect to OEEM.

STUDY 2

Methods

Participants and procedure. We tested all of our predictions using a sample of working adults from a variety of industries and organizations. We recruited participants from the authors' professional networks and from the alumni networks of our universities. Using a combination of direct invitations and requests through alumni newsletters, we received 639 responses to our employee survey. Participants were asked to provide contact information for their significant other and a manager in their organization. Of the total, 228 provided a significant other email, while 252 provided a manager email. We then sent email invitations for separate significant other and manager surveys. In response, we received 138 complete significant other surveys and 105 manager surveys. The employee participants spanned a large variety of industry groups, including technology (20%), education (15%), government (11%), finance & banking (10%), and healthcare (8%). The employee sample was 59% male and the median age range reported was 36-40 years.

Measures

Employee variables. *Organizational expectations for email monitoring* (OEEM) outside of work was measured with the same three items from Study 1. *Anxiety* toward work electronic communications during nonwork time was measured using the same three-item scale from Study 1. The instructions for Study 2 asked participants to “Please indicate the extent to which you typically feel the following when you think about work-related electronic communication outside of work”. Responses were reported on a five-point Likert scale ranging from 1 (“not at all”) to 5 (“very much”).

We used two measures of employee well-being. *Health* was measured using the same measure as Study 1. *Relationship quality* was measured on a three-item scale from Kacmar and colleagues (2014) using the same agreement scale as expectations. A sample item is “All in all, I am satisfied with my marriage/personal relationship.” (Kacmar, Crawford, Carlso, Ferguson & Whitten, 2014)

Significant other variables. In the significant other survey, we used the same response scales but modified the stems and items from the employee surveys as follows. We asked them to report their own *Anxiety* toward their partner’s use of work electronic communications. We used the same stems and items to have the significant other report their own *Relationship Satisfaction* and *Health*.

Managerial expectations. We used the manager surveys to investigate whether or not employee perceptions of OEEM during nonwork time were consistent with those in managerial roles, who may be creating such expectations (both intentionally and unintentionally). We used the same scale that was provided for employees to measure OEEM and then matched employee-manager dyads for our analyses.

Control variables. Because expectations should be related to time spent on electronic communications, we controlled for *Time* spent on work electronic communications during nonwork time in a typical week in hours (Belkin et al., 2016). Controlling for time also helped to account for actual resource depletion as manifested through anxiety and provided more confidence that our expectation effects were due to OEEM. *Gender* (1 = Male) was included as a control for all dependent variables because it has been associated with management of the work-life interface (e.g., Boswell & Olson-Buchanan, 2007; Matthews et al., 2006). Gender was retained in the model even though it did not have any significant effects and the results held without it. The descriptive statistics for the study 2 variables are displayed in Table 3.

Insert Table 3 About Here

Results

All study variables had reliabilities that were acceptable for research purposes. We conducted a confirmatory factor analysis to ensure a good fitting measurement model. The three-factor measurement model for employees fit the data well, RMSEA = .06, CFI = .98, $\chi^2(39) = 59$. We compared our three factor model with the fit of the best fitting two factor model (loading expectations and marital satisfaction on a single factor), and found the two factor model fit was significantly worse ($\Delta\chi^2(2) = 200, p < .01$). A single factor measurement model did not fit the data well, RMSEA = .29, CFI = .43, $\Delta\chi^2(5) = 492, p < .01$. This analysis suggests that our measurement model was appropriate.

For the 105 employees with a manager response, we found that the correlation between employee and manager ratings of OEEM was positive and significant ($r = .44, p < .01$). This suggests that our measure was an accurate reflection of OEEM outside of working hours. Our

data contained multiple predictor and outcome variables with indirect effects through mediating variables. In order to simultaneously test all of our predicted direct and indirect effects we used path modeling using Mplus Version 7.4 (Muthén & Muthén, 2015). We used path modeling to be consistent with guidance for analyzing actor-partner interdependence models (Fitzpatrick, Gareau, Lafontaine, & Gaudreau, 2016). Maximum likelihood estimation was used for the analyses. All hypothesized model paths were estimated. Figure 1 provides the standardized path coefficients for all significant paths of this model.

Insert Figure 1 About Here

Hypothesis 1 predicted that OEEM during nonwork time would be positively related to anxiety over work electronic communications. Table 3 shows that the correlation between OEEM and anxiety ($r = .29, p < .01$) was significant and in the expected direction. Figure 1 shows that the modeled path between OEEM and anxiety ($\beta = .26, p < .01$) was also significant. Therefore, Hypotheses 1 was supported.

Hypothesis 2 predicted that the effects of expectations on (a) health and (b) relationship satisfaction would be mediated by indirect effects through anxiety. Figure 1 indicates significant direct effects between anxiety and health ($\beta = -.21, p < .05$), but not for relationship satisfaction. We tested this indirect effect using bootstrap methods and found that the indirect effect of expectations on health through anxiety was significant (95% CI = $-.14, -.01$). Therefore, Hypothesis 2a was supported, but Hypothesis 2b was not.

Regarding crossover effects on the significant other, Hypothesis 3 predicted that employee anxiety would mediate the effects of OEEM on significant other anxiety. Figure 1 indicates a significant direct effect between employee and significant other anxiety ($\beta = .32, p <$

.01). Bootstrap methods showed that the indirect effect of expectations through employee anxiety was significant (95% CI = .02, .18). Therefore, Hypothesis 3 was supported.

Hypothesis 4 predicted that the effects of expectations on significant other (a) relationship satisfaction and (b) health would be mediated by indirect effects through employee anxiety and significant other anxiety. Figure 1 indicates significant other relationship satisfaction had significant direct relationships with employee anxiety ($\beta = -.20, p < .05$) and significant other anxiety ($\beta = -.22, p < .05$). There was also a significant relationship between significant other anxiety and health ($\beta = -.22, p < .05$). Our model provided multiple indirect paths between expectations and significant other outcomes. For significant other relationship satisfaction, the indirect path from expectations to employee anxiety to significant other relationship satisfaction (95% CI = -.15, -.01) was significant, while the indirect path through significant other anxiety was marginally significant (90% CI = -.05, -.01). For significant other general health, the indirect effect of expectations through employee and significant other anxiety was marginally significant (90% CI = -.06, -.01). Overall, Hypothesis 4a was supported, but Hypothesis 4b was only marginally supported.

GENERAL DISCUSSION

Examining the two separate samples of working adults, this research (1) documented specific immediate negative effects of OEEM on employee levels of anxiety and health using experience sampling approach (Study 1) and (2) replicated and extended findings on the effects of OEEM-induced anxiety on health, while also demonstrating employee anxiety effects on significant other's anxiety, health and relationship satisfaction (Study 2). In doing so, we integrated insights from conservation of resources and resource allocation theories with research on stress and anxiety to propose and empirically test one of the mechanisms through which we

expected these detrimental outcomes to occur. Specifically, the results from the two studies clearly exposed OEEM as a significant chronic stressor that leads to feelings of anxiety in employees and their significant others and negatively impacts health. Even though we did not see a significant effect of OEEM and anxiety on employee relationship satisfaction in Study 2, we did find strong effects on marital satisfaction of significant others. One of the reasons could be that employees try to keep boundaries between work and nonwork domains and compartmentalize the email-related anxiety (or keep it to themselves) from their marital relationships and may be less aware of the detrimental effects on relationship quality. On the other hand, the significant other bears the brunt of attention allocation and more acutely aware the impact on relationship quality. Even though the nature of our data collection does not allow us to fully examine this assumption, the fact that we saw a strong negative effect of OEEM on employee health implicitly supports this explanation.

Taken together, our findings inform research on the insidious effects of work-related electronic communication beyond increased worker productivity (e.g., Aral, Brynjolfsson, & Van Alstyne, 2012; Karr-Wisniewski & Lu, 2010) and experiences of work-family conflict (Belkin et al., 2016; Butts et al., 2015; Piszczek, 2017), and into the realm of health and well-being for both workers and their families. Electronic communication has been revolutionary for the workplace. In many ways, it is a valuable tool when used appropriately (e.g., Demerouti et al., 2014; Hill, Kang, & Seo, 2014), allowing employees more flexibility in where and when they work. Yet, there are also negative implications. In particular, recognizing the norms that electronic communication has created around monitoring expectations and how these norms impact employee role enactment and family well-being is of particular importance for scholars and practitioners. Our study leads to key implications in three areas.

Implications for Resource-based Theories of Stress

First, extending models on job-related stressors (Demerouti et al., 2001; Hobfoll et al., 2018), we test and validate OEEM as a significant chronic stressor in employee daily lives. Specifically, our findings that employee-rated OEEM are strongly correlated with daily work-email monitoring (Study 1) and are highly consistent with managerial expectations (Study 2) indicate that subjective employee perceptions regarding email monitoring expectations is an important marker of employee stress that needs to be taken into account by scholars and practitioners. The literature studying the effects of OEEM on organizational and personal outcomes is still scarce, but even studies that account for organizational expectations for email-related availability during nonwork time predominantly employ a subjective measure of expectations (e.g., Belkin et al. 2016; Butts et al., 2015; Piszczek, 2017). Without validation, this measure may be biased by subjective interpretations due to differences in cognitive styles or prior experiences (e.g., resulting negative outcomes may be due to those employees that are very sensitive or already cognitively depleted or disgruntled). Thus, our findings provide evidence for OEEM construct validity as an objective measure of organizational norms.

Second, applying conservation of resources and resource allocation theory logic allows us not only to conceptualize email expectations as an additional demand on employee time and cognitive resources that creates chronic stress and leads to anxiety, but also to demonstrate that saliency of those demands is increased due to constant “physical” presence of email in a nonwork domain through one’s ability to check email anytime anywhere (and managerial expectations that an employee will do so). Our findings imply that a resource allocation dilemma between work and nonwork domains may be the driver of employee work-related anxiety and may exacerbate the impact of stress and resulting strain. Even when an organization does not

explicitly encourage or reinforce expectations about work-related electronic communication after hours, such expectations can increase in saliency based on the behaviors and attitudes of managers and coworkers, as well as be perpetuated by the obsession with connectivity in modern society (Turel et al., 2011). Accordingly, these expectations and resource conflicts they create with respect to one's nonwork lives have to be taken into account by scholars.

Third, by demonstrating both intrapersonal effects of chronic stress and its immediate interpersonal impact on employee significant other, our research advances the literature on job stressors by accounting for the insidious role of continuous psychological availability not only on a focal employee, but also on their loved ones. Our paper thereby helps to refine the concept of resources and its implications on employee and their significant other well-being and stimulates a number of avenues for future research. For example, the fact that we did not see a strong impact of OEEM on employee's marital satisfaction, but at the same time, found a strong negative impact on significant other's marital satisfaction and only weak effects on their health stresses the need to investigate long-term impact of the OEEM as a chronic stressor. Some specific questions that can be addressed by future studies include: How the strength of OEEM differ for the focal employees vs. their families' other health and well-being outcomes? What are the long-term effects on the relationship when at least one the partners is facing high OEEM at work? Does this dynamic change for the dual-earner couples when both partners have high OEEM? We believe these questions warrant further investigation.

Implications for Boundary Theory and Work-Family Interface Literature

Framing OEEM as a trigger of resource allocation dilemma also opens the conversation on how work norms in modern society alter not only work-nonwork boundaries, but also how individuals must adapt their non-work identity in dealing with these expectations over time. Our

findings point out that employees and their families must deal with what is also referred to as the “extra role adjustments,” where adjustments in one role (e.g., organizational expectations regarding email availability) trigger adjustments in other roles, such as family expectations (Louis, 1980). Our study highlights the critical role of email-related expectations in these adjustments. Unlike prior research that accounted for work and family roles conflict when someone may bring their work home to finish up tasks or leave work for some time to finish nonwork related tasks (e.g., Ashforth et al., 2000; Bakker & Demerouti, 2007), the expectations-triggered anxiety explored here imply that work is always “at home” via electronic connectivity. An important insight from our research is that work overload in a traditional environment with clear boundaries between work and nonwork domains may not be as damaging as OEEM, since it still affords some sense of predictability and control to an employee. For instance, as we elaborated earlier, the fact that employee marital satisfaction was not affected by OEEM in our study may indicate that employees are trying to separate work and work-related anxiety from spillover to nonwork domains. However, at the same time, negative impact of OEEM on employee health may be a worrisome indicator that boundary permeability still takes its toll. Taken together, our findings imply that in modern work environment with “flexible” boundaries, anxiety is a first response to this lack of control and the fact that both employees and their significant other experience anxiety due to email-related organizational expectations signifies a clear conflict between employee work and family life boundaries.

Our results also highlight the need for scholars working in the work-family interface to systematically account for the role of OEEM on employee and significant other health. In fact, we used a validated health measure that has been tied to objective health outcomes, including hospitalization, chronic disease, and mortality, in other research (DeSalvo, Bloser, Reynolds, He,

& Muntner, 2006; Meng et al., 2014; Strawbridge & Walhagen, 1999). This suggests that email expectations can have a detrimental effect on the health of employees and their families. It may not “feel” to the employee that he or she is headed toward illness because of these expectations, but over time, our results suggest that this can occur. The same can be said with regards to employee significant others – even though our findings indicate only weak relationship between OEEM, employee anxiety and significant other’s health, the strong relationship between employee and their significant other anxiety, as well as negative impact of those variables on marital satisfaction could be a first sign of OEEM negative effects (even when one does not recognize it) and can eventually lead to more damaging outcomes for a significant other’s health as well.

Implications for Research on Work-related Anxiety

Finally, and related to the above discussion, by showing the key role of anxiety in the adverse outcomes of electronic communication expectations, our findings call for scholars to explore the ways to minimize or buffer negative affective reactions and its effects on employee and their significant others well-being. Taken together, identifying anxiety as a key mediator in the relationship between expectations and well-being outcomes is valuable for two related reasons: 1) it suggests the possibility that the dysfunction of expectations could be managed by considering how such anxiety could be mitigated, and 2) it provides a platform for exploring potential moderators, specifically borrowing insights from the emotion regulation literature, to the relationship between email expectations and employee well-being.

For instance, our findings with respect to email-related anxiety and subsequent negative implications on employee health suggest that such expectations may not necessarily be helpful for work domain at the expense of non-work relationships. That is, as anxious employees are

putting themselves into a work mindset during nonwork hours, anxiety triggered by the stressor and the boundary violation perceptions may prevent them from optimal performance on tasks that require focus, concentration and efficiency (e.g., Eysenk et al., 2007). This, coupled with lack of relational mindfulness with their significant other and impairment of nonwork role fulfillment, may initiate a vicious cycle of anxiety and negative affect in both the employee and their significant other. Accordingly, scholars may also consider the pervasiveness of emotional regulation strategies, such as self-blame or rumination that are associated with greater emotional vulnerability and depressive symptoms (Garnefski, Kraaij, & Spinhoven, 2001) as a result of expectations-triggered resource allocation dilemma. Does the fact that email is an “always present” trigger reinforce negative emotional regulation cycles in the focal employee via emotional suppression (Gross, 1998)? Does this increase other-blame on the employee’s significant other or the organization, and thus, further deteriorate relationship satisfaction and well-being?

Additionally, might positive emotional regulation strategies, such as emotional reappraisal, perspective taking or positive affect infusion (Gross, 1998) help employees to cope with OEEM-induced anxiety? For instance, positive emotion regulation strategies have been found to increase the quality of social interaction among peers (Lopes, Salovey, Côté, Beers & Petty, 2005). Moreover, strong marital relationships and positive emotional events of nonwork life may buffer negative impact of anxiety and improve employee performance on job-related tasks (Bono, Glomb, Shen, Kim, & Koch, 2013; Butts et al., 2015; Weiss & Cropanzano, 1996). Whether positive emotion regulation strategies have the same effect on how employees manage their work and non-work life remains to be answered by future studies and we encourage

scholars to account for the input of other affective reactions, in addition to anxiety, in future studies of work-family interface and individual well-being.

Practical Implications

We are not the first to raise concerns about the potential downside of electronic communications. Authors of prior work have suggested a number of possible interventions to address these issues, including having “no email” policies at certain times of day, limiting the hours employees are allowed to respond to electronic communication, and asking managers to set good examples around appropriate email use (Belkin et al., 2016; Piszcek, 2017). Our research allows us to make more targeted recommendations because it identifies mechanisms of negative downstream effects. In particular, our findings point to anxiety as a critical mediator of electronic communication demands. Mindfulness training has been shown to be an effective approach to reducing anxiety and work-related negative affect (Hülshager, Alberts, Feinholdt, & Lang, 2013); perhaps this would suggest mindfulness interventions could help with the long-term health and relationship satisfaction effects of electronic communication demands. As such, a focus on mindfulness could potentially help employees increase their presence in family interactions, which ideally, would reduce issues of conflict and improve relationship satisfaction for the employee and his or her significant other. Importantly, mindfulness is a practice within the control of the employee even if email expectations are not.

What can organizational management do to mitigate the negative effects identified in our work? Of course, if possible, organizational policies that reduce expectations to monitor electronic communication outside of work would be ideal. This may not always be an option. Our work points to the value of targeting boundary management. The solution may be in setting boundaries on when electronic communication is acceptable even if some nonwork hour

engagement is required. For example, organizations could set off-hour email windows and limit use of electronic communications outside of those windows or set up email schedules when various employees are available to respond. The basic idea would be to create clear boundaries for employees that indicate the times when work role identity enactment is likely to be needed and the times when employees can focus solely on their family role identities.

Additionally, organizational expectations should be communicated clearly. If the nature of a job requires email availability, such expectations should be stated formally as a part of job responsibilities. Putting these expectations upfront may not only reduce anxiety and negative affectivity in focal employees, but also increase understanding from significant others by reframing boundaries and surrounding expectations around employee work-time. For example, research indicates that when employees are allowed to engage in part-time telecommuting practices, they experience less emotional exhaustion (Windeler, Chudoba & Sundrup, 2017) and decreased work-family conflict (Golden, Viega, & Simesk, 2006). Moreover, having family supportive supervisors that are willing to accommodate flexible schedules both formally and informally has been shown to significantly reduce perceptions of work-family conflict for the focal employee and their significant others (Breugh & Frye, 2008). Certainly, organizations should take the issues we highlight in this work seriously because negative health outcomes are costly to organizations (Darr & Johns, 2008; Goetzel, Anderson, Whitmer, Ozminkowski, Dunn, Wasserman, & Health Enhancement Research Organization (HERO) Research Committee, 1998; Spector & Jex, 1991).

Limitations and Future Directions

Our research points to some promising areas for future research. In addition to suggestions provided above, some important issues associated with resource allocation dilemma

that provided the core of our theorizing, remain to be addressed by future studies. While we did not measure resource allocation dilemma directly, our theoretical explanation and our supported model point to the detrimental effects of this dilemma on employee anxiety associated with electronic communication and fulfilment of nonwork roles. Perhaps future work should focus more on direct measures, such as frequency of employee transitions between these two domains. We attempted to address this issue by including monitoring frequency in our model. Still, it is possible that some employees experienced anxiety due to not complying with higher expectations. Future work diving more deeply into the importance of role identities and the transition costs of role switching would move this work forward.

Additionally, to better understand adverse effects of email-related organizational expectations and inform potential interventions to mitigate those effects, future research should employ more longitudinal research methods in addition to experience sampling and cross-sectional data. Specifically, our research indicates that there is the possibility of long-term health effects as a result of the unfolding resource dilemma around electronic communication expectations. Therefore, measuring actual health outcomes (e.g., blood pressure, cardiovascular response to stress, etc.) in addition to self-reports may yield further insights onto the impact of OEEM on employee and their families' well-being. In addition, documenting daily fluctuations in employee affective responses of work to nonwork behavior using more longitudinal ESM studies will provide further insights on the impact of OEEM and the ways to minimize or buffer negative effects through intervention studies.

Conclusion

Electronic communication is here to stay, and the implications of this technological advancement for employees must be fully understood. Our research points to the insidious

downsides of high electronic communication norms, which may be at least partially to blame for the national epidemic of stress and anxiety. In particular, such norms impact more than the worker; they also have crossover effects on family members and create negative outcomes in the personal domain. Employees today must navigate more complex boundaries between work and family than ever before. OEEM during nonwork hours appear to increase this burden as employees feel an obligation to shift roles throughout their nonwork time. Efforts to manage these expectations are more important than ever given our findings that employees' families are also affected by these expectations.

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TABLE 1
Means, Standard Deviations, and Correlations for Study 1 Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Gender	.50	.50						
2. OEEM	3.21	1.22	.10	(.92)				
3. Monitoring	2.18	.99	-.06	.53**				
4. Time on Email	35.8	45.5	-.03	.35**	.66**			
5. Anxiety	1.64	.84	-.10*	.29**	.43**	.39**	(.87)	
6. Health	77.0	14.4	.01	-.22**	-.23**	-.20**	-.27**	
7. Conflict w/SO	1.42	.72	.05	.23**	.20**	.16**	.18**	-.11

Note: Individual $N = 108$. Day $N = 376$. Coefficient alpha is provided along the diagonal. Time was coded as minutes. Gender was coded as 1 for male and 0 for female. SO = Significant Other.

** = $p < 0.01$, * = $p < 0.05$

TABLE 2
HLM Results Study 1

	Anxiety	Health	Conflict
Variable	Model 1	Model 2	Model 3
Intercept (b_{00})	1.76**	78.9**	1.39**
Level 2			
Gender (b_{01})	-.18	.26	.09
OEEM (b_{02})	.22**	-2.79**	.15**
Level 1			
Monitoring (b_{10})	.23**	.21	.09
Time spent on Email (b_{20})	.00	.02	-.001
Anxiety (b_{30})		-2.67*	.15*
σ^2	.16	40.6	.26
Pseudo-R ²	.49	.35	.18

$N_{\text{Level 1}} = 376$. $N_{\text{Level 2}} = 108$.

** = $p < 0.01$, * = $p < 0$.

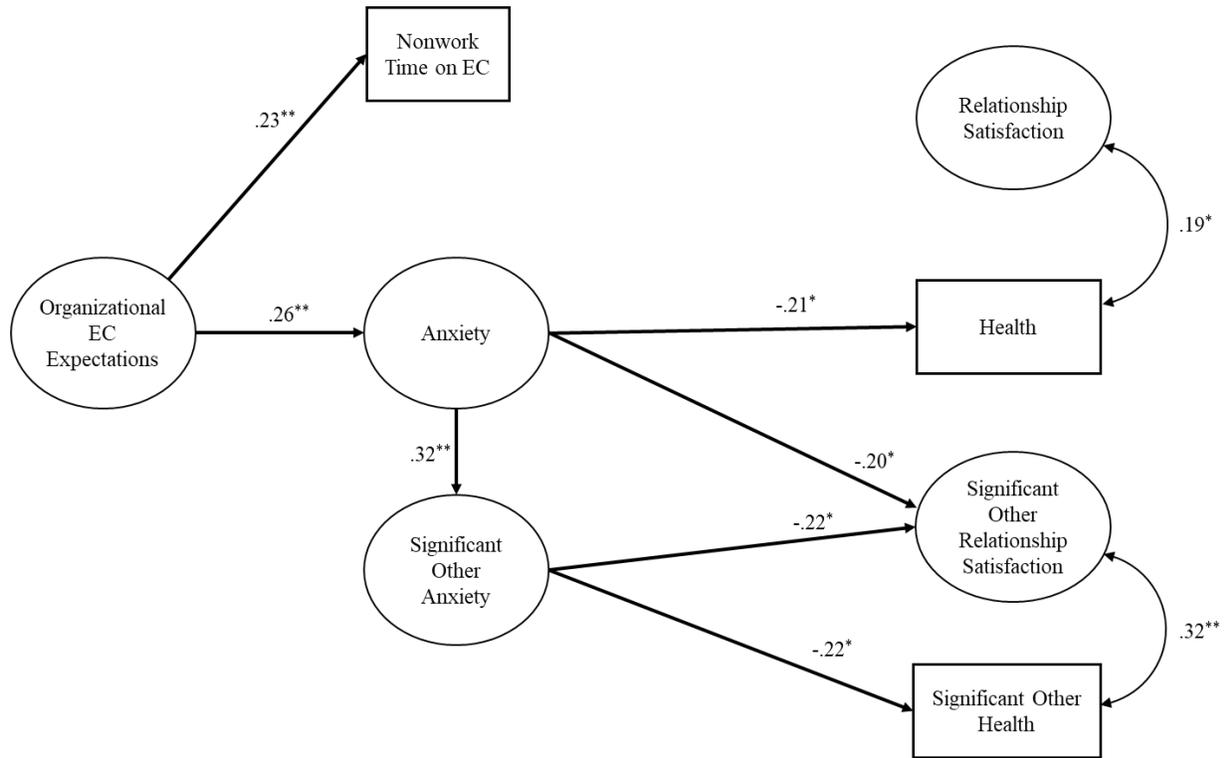
TABLE 3
Means, Standard Deviations, and Correlations for Study 2 Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Gender	.59	.49								
2. Time on Email	7.21	7.26	.02							
3. OEEM	3.26	1.04	.05	.23**	(.87)					
4. Anxiety	2.41	.95	.08	.08	.29**	(.88)				
5. Rel. Sat.	4.40	.63	-.01	-.06	.01	.10	(.85)			
6. General Health	78.0	15.5	-.02	-.08	-.14	-.23**	.19*			
7. SO Anxiety	1.81	.92	-.04	.19*	.16	.29**	.04	-.19*	(.91)	
8. SO Rel. Sat.	4.16	.88	.05	.05	-.02	-.21*	.10	.11	-.23**	(.91)
9. SO Health	78.1	10.8	-.02	-.03	.04	-.02	.01	.09	-.19*	.34**

Note: $N = 138$. Coefficient alpha is provided along the diagonal. Time was coded as hours. Gender was coded as 1 for male and 0 for female. Rel. Sat. = Relationship Satisfaction; SO. = Significant Other.

** = $p < 0.01$, * = $p < 0.05$

FIGURE 1
Spillover Results between Employee and Significant Other



Note: N = 134. Only significant paths shown. EC = Electronic Communication
 $** = p < 0.01$, $* = p < 0.05$