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Adding Fuel to the Fire: The Exacerbating Effects of Calling Intensity on the Relationship Between Emotionally Disturbing Work and Employee Health

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The burgeoning occupational callings literature has shown that feeling called to a job is associated with an array of positive job-, career-, and health-related outcomes. However, recent studies have begun to indicate that there may also be a "negative side" of callings. The present study builds on this emerging perspective to examine whether feeling called to a job makes helping professionals more vulnerable to the negative effects of acute stressors. Specifically, we integrated identity, cognitive rumination, and psychological detachment theories to explain how feeling called to one's job (i.e., the strength of one's calling intensity) might bolster the negative, indirect relationship between emotionally disturbing work and strain (i.e., mental exhaustion, sleep quality, and alcohol consumption) through negative work rumination. Results from a 10-week diary study with a national U.S. sample of 211 paramedics revealed that on weeks that paramedics experienced more emotionally disturbing work, they engaged in greater levels of negative work rumination, which in turn was associated with greater mental exhaustion and worse sleep quality, but not greater alcohol consumption. In addition, calling intensity moderated the indirect effect of emotionally disturbing work on both mental exhaustion and sleep quality, such that these indirect effects were stronger among those with higher (vs. lower) levels of calling intensity. These results provide evidence that employees who feel most called to their jobs may be particularly vulnerable to short-term negative outcomes associated with emotionally disturbing work.

Keywords: calling, work rumination, strain, employee health, emergency medical services

Occupational calling—a transcendent and all-consuming passion to make a meaningful, purposeful impact through one's work—is typically conceptualized as a positive personal characteristic that results in increased resources as well as positive outcomes for employees (Dobrow & Tosti-Kharas, 2011; Duffy et al., 2018; Thompson & Bunderson, 2019). In fact, evidence generally supports this idea that living out a calling is associated with a multitude of positive outcomes, such as organizational commitment (Duffy et al., 2011), life satisfaction (Duffy et al., 2013), work engagement (Hirschi, 2012), and performance (Andel et al., 2016). Accordingly, the literature on callings has largely focused upon these positive outcomes of living a calling (hereinafter referred to as "calling intensity"; Clinton et al., 2017).

Alternatively, some emerging evidence suggests that those with a high calling intensity may also be especially at risk for negative mental and physical health outcomes. This initial work suggests that these individuals are often willing to sacrifice their personal well-being in order to fulfill their work duties, making them susceptible to negative outcomes such as overwork and exhaustion (Bunderson & Thompson, 2009). Despite these findings, there is still a need to (a) investigate the specific *job contexts and situations* where this potential "negative side" may be particularly problematic and (b) unveil the mechanisms that explain *why* called individuals may sometimes be at a greater risk for negative health consequences at work. In the present study, we posit that those who feel called to

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their work may have a particularly difficult time detaching from jobs that frequently entail a high degree of emotionally disturbing work events. This inability to "hang up their calling" may have serious implications for their well-being, particularly when bad things happen at work that necessitate detachment for recovery. The purpose of this article is to therefore elucidate the role of calling intensity on the stress process for high-risk employees who frequently encounter emotionally disturbing work events. Integrating identity theory (Burke, 1991) with theories of psychological detachment and rumination (Brosschot et al., 2006; Sonnentag & Fritz, 2015), we present and test a theoretical framework to show how perceiving a strong calling intensity makes one susceptible to negative, acute strain in the wake of emotionally disturbing work events by triggering negative work-related rumination. In doing so, this study contributes to the literature in several ways.

First, we answer a recent call by Duffy et al. (2018) to further examine the situations when occupational callings may have *negative* effects for employees. Although some recent quantitative research has investigated the role that callings play in making one more vulnerable to chronic, lower intensity work stressors, such as organizational constraints (Wilson & Britt, 2020), research has yet to examine the *mechanisms* involved in this process, as well as the consequences that called individuals experience when faced with *more acute, emotionally disturbing* work events. These are critical issues that merit investigation, especially given recent events such as the global coronavirus (COVID-19) pandemic that has undoubtedly led to extreme levels of traumatic and emotionally disturbing events for certain workers, such as first responders, as they provide care to the countless acutely ill patients around the world (Coleman, 2021). The present study investigates these critical issues with a unique weekly design (conducted prior to the ongoing COVID-19 pandemic) that captures the ruminative responses and acute reactions of paramedics as they encounter extreme, emotionally disturbing events (e.g., watching a person die, coming across a severely injured child). Unveiling the negative outcomes associated with callings in this context is necessary not only to provide a fuller picture of the implications of calling intensity on employee health and well-being but also to inform organizations that their most dedicated and passionate employees may actually be those most vulnerable (and therefore should be given more support and resources), especially in certain work contexts, such as helping professions that frequently encounter acute and critical emotional events on the job.

We further contribute to the literature with our unique study design. Specifically, our weekly diary design allows us to take a within-person approach to understanding the implications of emotionally disturbing work incidents among paramedics so that we can assess the degree to which these processes vary weekly within each person. This is important, because a higher calling intensity may be associated with better well-being overall, but a greater sensitivity to certain work events. Furthermore, effects are not necessarily homologous across levels of analysis (Chen et al., 2005), and therefore relationships that hold at the between-person level (e.g., callings are associated with better health and well-being outcomes in general) may not necessarily hold at the within-person level (those with a higher calling intensity may experience worse health and well-being outcomes on weeks that they experience acute, stressful events). Indeed, previewing some of our findings, our results show that although callings are overall associated with *better* well-being (i.e., reduced mental exhaustion) at the between-person level, we also find that those who feel called to their job are more vulnerable to acute, emotionally disturbing events in the short term. Accordingly, by taking a weekly diary approach, we are able to unveil the specific and complex role that callings have in the context of work stress, which has the potential to greatly influence the ways in which researchers consider the role of callings at work.

Ultimately, we derive a theoretical explanation for short-term effects of emotionally disturbing work that may not be a "one size fits all" phenomenon. In fact, we posit that ruminative responses to emotionally disturbing work may be especially strong for those with a higher calling intensity. Therefore, this study contributes to our understanding of the employee stress process by not only examining *if* emotionally disturbing work leads to worse short-term outcomes for certain individuals but it also provides insight into *why* these effects may differ across individuals. This has practical implications for organizations aiming to reduce the negative effects of work stressors, especially within high-risk occupations, by shedding light upon who might benefit most from an intervention that deters work-related rumination following particularly disturbing work events. This is particularly critical in light of the extremely high turnover rates among emergency medical services (EMS) professionals that are made worse by the current COVID-19 pandemic (Mosher & Mahbubani, 2020), thus demonstrating that it is more crucial than ever to understand how emotionally disturbing events affect the health and well-being of those who are most dedicated to the profession.

Theoretical Background and Hypothesis Development

Emotionally Disturbing Events and Rumination

Exposure to extreme, emotionally disturbing events frequently occurs in high-risk helping professions such as nursing and emergency medicine, as these professionals respond to scenarios that involve human suffering, danger, and death (Regehr et al., 2002). For instance, within EMS, some of the most common disturbing events that employees encounter include witnessing a person dying, encountering the body of someone who recently died, and encountering an individual who has been badly beaten (Donnelly & Bennett, 2014). Although it may be assumed that the employees who choose to work in these occupations are desensitized to such experiences, evidence suggests that they continuously find these events to be emotionally disturbing (Halpern et al., 2009), leaving them vulnerable to traumatic strain (Jones, 2017). Accordingly, and in alignment with traditional work stress models that propose individuals experience an array of negative strain reactions in response to the perception of work stressors (e.g., Lazarus, 1995), meta-analytic evidence suggests that almost 15% of ambulance workers experience posttraumatic stress disorder (PTSD; Berger et al., 2012). Further, high levels of stress among the emergency services population also relate to high rates of suicide (for a review, see Stanley et al., 2016).

Theoretical and empirical evidence suggests that negative emotional experiences, such as the aforementioned emotionally disturbing work events, are often associated with ruminative behavior (Gold & Wegner, 1995). Generally, researchers theorize that such emotionally arousing experiences lead to the encoding of exceptionally vivid and detailed memories (Brown & Kulik, 1977), thereby increasing one's attention to their feelings and thoughts, and making it difficult to detach from the experience

(Cropley & Zijlstra, 2011; Gold & Wegner, 1995). Further, evidence from neuropsychology suggests that *negative* arousing events tend to be more easily recalled than *positive* arousing events (for a review, see Kensinger, 2009). Indeed, research in the clinical psychology literature consistently finds an association between negative life events and rumination (e.g., Michl et al., 2013), and studies within organizational psychology have linked work-related stressors (such as customer mistreatment) to negative rumination (e.g., Baranik et al., 2014; Wang et al., 2013).

We argue that within the context of EMS, on weeks that paramedics encounter a high degree of emotionally disturbing work events that are frequently characterized by patient suffering and death (Donnelly & Bennett, 2014), they may be particularly susceptible to negative work rumination. More specifically, based on the theoretical perspectives and previous findings presented above, we contend that paramedics who report high levels of emotionally disturbing work events will engage in more negative work rumination that same week.

Hypothesis 1: Instances of emotionally disturbing work will be positively related to instances of negative work rumination.

The Role of Negative Work Rumination

Ruminating about negative work events is associated with detrimental effects for employee health and well-being (for a review, see Cropley & Zijlstra, 2011). According to the perseverative cognition model of stress (Brosschot et al., 2006), this is because rumination sustains one's heightened psychophysiological stress response (Ottaviani et al., 2016), and in turn depletes cognitive and emotional resources, delays recovery of those resources, and amplifies short-term strain responses (Brosschot et al., 2006; Cropley & Zijlstra, 2011; Watkins, 2008).

This also aligns with work-specific theories, which suggest a lack of psychological detachment from work (e.g., ruminating about work even after the workday is over) accounts for the relationship between work stressors and strain (e.g., Meijman & Mulder, 1998; Sonnentag & Fritz, 2015). For instance, the stressor–detachment model (Sonnentag & Fritz, 2015) theorizes that when we encounter work events that we appraise as stressors, we immediately experience affective (e.g., anxiety, anger) and physiological (e.g., increased cortisol and epinephrine) strain responses. In order to reduce, or recover from, these heightened affective and physiological levels, one must have the opportunity to psychologically detach, or in other words mentally disengage, from work-related thoughts during non-work time. However, if one is *unable* to stop thinking about these negative work events, then these heightened arousal levels will endure. This sustained cognition will in turn continuously repeat the appraisal process, meaning these individuals will continue to use up cognitive and emotional resources as they repeatedly think about and evaluate the negative work event(s). Ultimately, this process will increase one's susceptibility to sustained strain outcomes after the workday is over (e.g., poor sleep quality, exhaustion).

Indeed, research taking a between-person perspective shows that frequency of ruminating about negative work events is directly associated with frequency of a variety of health consequences, such as maladaptive health behaviors (Clancy et al., 2016; Cropley et al., 2012), insomnia (Demsky et al., 2019; Yuan et al., 2018), and burnout (Firoozabadi et al., 2018). Research that considers the health implications of negative work rumination at the within-person level that more closely connects stressors to strains is limited. However, emerging evidence suggests that negative work rumination is associated with the short-term outcomes of daily negative affect (Wang et al., 2013) and sleep quality (Cropley et al., 2006; Vahle-Hinz et al., 2014).

In accordance with the aforementioned theoretical perspectives and empirical support, we posit that negative work rumination will be associated with strain indicators for our sample of paramedics, including involuntary psychological and physical symptoms, as well as behavioral responses (Clancy et al., 2016). In order to capture this range of outcomes, in the present study, we consider the relationship between negative work rumination and three indicators of strain: sleep quality (a physiological outcome), mental exhaustion (a psychological outcome), and alcohol consumption (a behavioral outcome). We describe the proposed relationships between negative work rumination and each outcome in more detail below.

Mental Exhaustion

First, we propose that one consequence of weekly negative work rumination is increased mental exhaustion. Specifically, in alignment with the stressor–detachment model, when one constantly ruminates about negative work events, they will be unable to "turn off" their affective and physiological strain responses, resulting in the continued depletion of their mental and physical resources (Watkins, 2008). Without an opportunity to properly recover those resources, these individuals are likely to experience feelings of mental exhaustion (Sonnentag & Fritz, 2015). In alignment with these postulations, a recent diary study showed that work rumination was significantly related to same-day emotional exhaustion in a sample of government agent employees (Flaxman et al., 2018).

Drawing upon the above theoretical (Sonnentag & Fritz, 2015) and empirical evidence, EMS professionals who engage in high levels of negative work rumination will maintain high strain response levels, thereby depleting limited cognitive and emotional resources. Accordingly, we propose that on weeks that EMS professionals engage in more negative work rumination, they will also experience higher levels of mental exhaustion.

Hypothesis 2a: Weekly work rumination will be positively related to weekly mental exhaustion.

Sleep Quality

We also expect that negative work rumination following emotionally disturbing work will impede one's ability to sleep, which is a central component of the recovery process (Berset et al., 2011). Although intuitively it may seem that sleep would come *more easily* following emotionally disturbing events that might leave a person mentally exhausted, theoretical perspectives from the recovery and sleep literatures propose that the sustained rumination (and the accompanying affective/physiological stress response) makes it harder for one to get quality sleep (Crain et al., 2018; Sonnentag & Fritz, 2015; Watkins, 2008). Indeed, Sonnentag (2018) recently coined the termed "recovery paradox" to describe "this tension between the necessity to recover when job stressors are high and the reduced likelihood to actually recover under these circumstances" (p. 173). Consistent with the notion of this paradox, a recent field study by Van Laethem et al. (2016) that followed doctoral students

before and after their dissertation defenses showed that daily perseverative cognition (including rumination) accounted for the negative relationship between day-level stressors and both objective and subjective indicators of sleep quality.

In the context of the present study, EMS professionals who ruminate about their work may have an especially difficult time obtaining quality sleep that week. Accordingly, we propose that on weeks that EMS professionals engage in more work-related rumination, they will report worse sleep quality.

Hypothesis 2b: Weekly work rumination will be negatively related to weekly sleep quality.

Alcohol Consumption

In addition to poorer sleep and greater mental exhaustion, negative health behaviors are yet another consequence of perseverative thoughts, such as rumination (Clancy et al., 2016). This is because, as mentioned above, rumination prolongs our negative affective reactions to work stressors. Accordingly, we propose that individuals will be motivated to engage in behaviors that reduce these repetitive, unpleasant cognitions. One way that individuals may cope with such rumination is through alcohol consumption, as it reduces attentional capacities and in turn allows individuals to temporarily escape from their sustained ruminative thoughts (Frone, 2015; Steele & Josephs, 1990). Further, since rumination depletes individuals of cognitive executive functioning resources (Denson et al., 2012), individuals may be less able to control the amount of alcohol consumed. Meta-analytic evidence supports this assertion, indicating that at the person-level, rumination (both general and work-related) is associated with more health risk behaviors, including increased negative eating behaviors (Cropley et al., 2012) and alcohol consumption (Clancy et al., 2016; Frone, 2015).

EMS professionals who report high levels of work-related rumination may be especially motivated to escape from their repetitive and negative work-related thoughts. Therefore, we propose that on weeks that EMS professionals ruminate more about negative work events, they will also engage in greater alcohol consumption.

Hypothesis 2c: Weekly work rumination will be positively related to weekly alcohol consumption.

Finally, we posit that negative work rumination will mediate the relationship between emotionally disturbing work and strain. Specifically, in alignment with the tenets of the stressor–detachment model (Sonnentag & Fritz, 2015), we propose that an inability to disengage from work-related thoughts (e.g., via negative work rumination) impedes employees' ability to recover from work-related stressors (e.g., emotionally disturbing work) and ultimately increases their susceptibility to short-term strain responses.

Hypothesis 3: Instances of negative work rumination will mediate the relationship between emotionally disturbing work and (a) mental exhaustion, (b) sleep quality, and (c) alcohol consumption.

Calling Intensity as a Moderator

As proposed above, exposure to emotionally disturbing events is likely detrimental to most, if not all individuals. However, are some individuals more susceptible to ruminating when faced with emotionally disturbing work than others? Based upon identity theory (Burke, 1991; Thoits, 1991, 2012) and recent studies that examined callings and a lack of psychological detachment, we propose that individuals who feel called to their work may be particularly at risk of being negatively impacted by such events.

According to identity theory, one's self-concept is informed by the various roles, or identities, that one "plays" in society (Stryker & Burke, 2000). These identities are organized into a "prominence" hierarchy, such that some identities are more central, or prominent, to one's self-concept than others. Such prominent identities are key sources from which people derive their sense of meaning, value, and purpose (Stets & Serpe, 2013). Accordingly, Thoits (2012) posited that this notion of identity prominence is particularly important when it comes to the stress process, noting "... the more an individual identifies with, views as salient, or is committed to a particular self-conception, the greater should be the emotional impact of stressors that occur in that domain" (p. 362). That is, individuals will be particularly reactive to stressors that occur within the domain of a prominent identity, as such stressors threaten their ability to fulfill the behavioral expectations of that given identity.

In alignment with the extant callings literature, we assert that a high calling intensity indicates that one's work role serves as a prominent, all-consuming identity (e.g., Nielsen et al., 2020). Notably, this identity is unique, such that it is often driven by the desire and perceived duty to make a meaningful impact on others through their work (Dik & Duffy, 2009; Duffy et al., 2018), thereby making a high calling intensity distinct from other identity-related constructs such as work passion (Lajom et al., 2017), work centrality (Hirschi, 2011), and career commitment (Dobrow Riza et al., 2019). Consequently, as indicated by identity theory, individuals with a higher calling intensity should be particularly responsive to emotional events that occur within their work domain. One way that this emotional response may manifest is through increased rumination about work-related emotional events (Cropley & Zijlstra, 2011).

Based on these theoretical arguments, those with a higher calling intensity should experience stronger ruminative responses (i.e., lower psychological detachment) in certain situations, such as *in the wake of specific negative work events*, rather than simply an overall lack of detachment. However, existing quantitative examinations have thus far focused only on the direct effects between callings and psychological detachment rather than on increased sensitivity (i.e., calling intensity as a moderator). For example, Clinton et al. (2017) showed that calling intensity is associated with low levels of psychological detachment, providing evidence that called individuals generally find it difficult to mentally "let go" of work-related thoughts during nonwork time. The authors explained that individuals with a high calling intensity often experience a deep "sense of unbending moral duty" toward fulfilling their work duties (Clinton et al., 2017, p. 30), suggesting that the all-consuming nature of callings makes it inherently challenging to regulate work-related thoughts after the workday is over. We note that the valence of this continued reflection about work during nonwork time will likely be quite positive for called employees' well-being when they recall recent work events are pleasant. For instance, in the context of the present study, we imagine that a recent episode of saving a child's life would result in extremely uplifting and fulfilling work reflections for a called individual. However, in the case of emotionally disturbing work events, such as episodes of

patient suffering or death, we postulate that called paramedics will engage in extremely negative work reflections, as these are precisely the types of events that they have dedicated their efforts toward eliminating. Given evidence that many called individuals typically feel drawn to their work specifically because they feel it is their mission and duty to *help others* (e.g., Zhu et al., 2021), we posit that this pattern of effects may be especially acute in helping professions (e.g., EMS) where the stakes for fulfilling the duty of one's calling are exceedingly high.

Indeed, qualitative studies provide evidence that called individuals within helping professions are exceptionally reactive to negative work events, leading to detrimental effects on their well-being. For instance, in an interview study with animal service workers, Schabram and Maitlis (2017) found that called individuals often experienced feelings of extreme sorrow and disheartenment upon exposure to work-related stressors and events that run counter to their goal of making "a difference in animals' lives" (p. 592), noting that the impact of negative work-related stressors on those with a high calling intensity "may be intensified by high standards and an insatiable hunger to fulfill a purpose" (p. 588). Similarly, in a qualitative study of zookeepers, Bunderson and Thompson (2009) noted that called individuals' perceived moral obligation to use their "unique passions and endowments" (p. 40) to make a positive impact on the world through their work drove them to fixate on emotional events and obstacles that hinder this mission. Across both of these qualitative studies, results showed that called individuals within helping professions were deeply impacted by negative work events, responding with mental anguish, intense rumination, and a willingness to make personal sacrifices (e.g., expending time, energy, well-being) in order to fulfill the duty and perceived moral obligation of their calling (i.e., to help others).

However, despite this qualitative evidence that called individuals, and especially those within helping professions, may be uniquely vulnerable to work-related stressors, only one study has provided preliminary quantitative evidence that calling intensity impacts the relationship between work stressors and strain. Specifically, in a two-wave study with a heterogeneous sample of employees, Wilson and Britt (2020) considered the impact of different components of callings on the relationship between chronic hindrance stressors (e.g., administrative hassles, unclear job tasks) and mental health symptoms. Although they did not explore possible mechanisms, the results of their study showed that the prosocial orientation component of callings strengthens the negative impact of hindrance work stressors. These results suggest that callings make individuals more vulnerable in the face of chronic hindrance stressors and suggest that it is called individuals' all-consuming, innate desire *to help others* through their work that is driving this effect.

Building upon this past work, the present study takes a different approach to looking at the stress process for called individuals by examining how calling intensity moderates the *within*-person relationships between an *acute* work stressor (specifically, emotionally disturbing work events) and three distinct health outcomes. We also consider a key mechanism in this process—negative work rumination. Specifically, in alignment with identity theory, we postulate that high levels of emotionally disturbing work events, such as witnessing the death of a child, should be particularly troubling for those who have a higher calling intensity (i.e., higher identity prominence), because such events fall within the domain of their prominent identity and thereby serve as identity-relevant stressors. In turn, the all-consuming nature of their calling should make it especially difficult for these individuals to stop thinking about these intensely negative work experiences, even after the workday is over (Sonnentag & Fritz, 2015). This continuous activation should ultimately make those with a higher calling intensity more susceptible to strain outcomes that same week (i.e., mental exhaustion, alcohol use, worse sleep quality; Brosschot et al., 2006; Sonnentag & Fritz, 2015) in comparison to those with a lower calling intensity.

> *Hypothesis 4:* Calling intensity will moderate the indirect relationship from emotionally disturbing work to (a) mental exhaustion, (b) sleep quality, and (c) alcohol consumption, such that when calling intensity is higher (vs. lower), the indirect relationship between emotionally disturbing work and each outcome (via negative work rumination) will be stronger (vs. weaker).

Method

Participants and Procedure

To be eligible for the study, participants had to be full time (i.e., 30+ hr/week) paramedics who average at least 10 calls per week and primarily provide direct patient care. Two hundred eleven paramedics were recruited from the National Registry of Emergency Medical Technicians (NREMT) certification database. This database consists of contact information of all emergency medical personnel who have been nationally certified by the NREMT. Two research fellows at the NREMT sent out an initial recruitment email, which included a link to a screener survey, to a sample of 10,062 current EMS professionals across the United States. Within 24 hr, 487 individuals responded, with 336 individuals meeting the eligibility criteria. Given funding constraints, 223 people were randomly selected from this list of eligible individuals to complete the initial baseline survey. Of this group, 211 individuals completed the initial survey. Participants' average age was 36.27%, and 72.6% of the sample was male. The average shift length was 23.4 hr, which corresponds to the 24-hr shifts that are typical of this EMS population (Patterson et al., 2012). Thirty-four percent of participants reported working an average of over 60 hr per week. Participants lived across the United States, representing 45 states. Retention rates across the study were high, as each participant in the study completed an average of 9.47 out of 10 weekly surveys.

This study consisted of two phases. In the first phase, participants received an email with links to an online training video and the initial baseline survey. The online training video briefly reviewed the general study purpose, survey schedule, and participant confidentiality. It also described the compensation schedule, in which participants earned $5 in Amazon gift cards for each weekly survey that they completed, with a $10 gift card bonus if they completed all 10 of the weekly surveys (with the potential to earn a maximum compensation of $60 in Amazon gift cards). The initial baseline survey included questionnaires to capture participant demographics and calling intensity.

In the second phase, which began 1 week after completion of the initial baseline survey, participants received the first of 10 weekly surveys. These surveys assessed the degree to which employees' work was emotionally disturbing over the past week, as well as their work rumination, burnout, drinking behavior, and sleep quality over

the past week. The surveys also asked participants to describe emotionally disturbing events that they encountered each week.

We chose a weekly design for three reasons, two of which stem from the type of stressor we focused on: emotionally disturbing events, which is likely to have a lower prevalence but a higher intensity that some of the widely studied stressors (e.g., workload, incivility, organizational constraints). First, theories of rumination (Brosschot et al., 2006; Martin & Tesser, 1989) imply that one is continuously reflecting on a past event *over time*, but that timeframe is not limited to a single day. Indeed, past research suggests that individuals often brood about a particular event over the course of multiple days (e.g., Chen et al., 2013; Syrek & Antoni, 2014), and we can expect that emotionally disturbing events that typically cause a very strong reaction would be harder to "shake off" and may be a prime example of how effects can last longer than a day. By measuring rumination over a week, we account for this possibility. A second reason for choosing a weekly design was to account for the fact that the base rate for emotionally disturbing events would be quite low. Indeed, drawing upon the authors' personal working experiences within EMS, as well as upon related studies that have focused on traumatic events within EMS (e.g., Donnelly & Bennett, 2014), we decided that a daily diary study would likely not capture enough within-person variance in emotionally disturbing events. Third, it is not uncommon for paramedics to work 24-hr shifts (indeed, the average shift length of paramedics in the present study was 23.4 hr), meaning that any postwork alcohol use and sleep would likely occur over the subsequent day or two, and not during the same day as a given shift. Ultimately, the weekly diary design allowed us to address these concerns while also examining paramedics' short-term stress response to emotionally disturbing work events (Donnelly & Bennett, 2014).

Measures

Calling Intensity

Perceptions of living a calling were measured at baseline with a shortened eight-item version of the Dobrow and Tosti-Kharas (2011) scale. The items were adapted to refer to participants' experiences as an EMS professional. A sample item from this scale is "I feel a sense of destiny about being an EMS professional." Participants responded to each item on a scale from 1 (*strongly disagree)* to 5 (*strongly agree*). The alpha reliability for this scale in the present study was .84.

Emotionally Disturbing Work

Emotionally disturbing work was measured with a two-item scale developed by Frone (2015), which was adapted to refer to the past week. Participants were asked to report how often they witnessed emotionally disturbing events at work *over the past 7 days* (1 = *never*; 5 = *always*). The items were "Over the past 7 days, how often did your job put in you emotionally unpleasant or disturbing situations?" and "Over the past 7 days, how often was the work you do emotionally unpleasant or disturbing?" The average weekly alpha reliability for this scale in the present study was .90.

In addition to the quantitative scale, participants had the opportunity to provide an open-ended description of an emotionally disturbing event that they experienced each week. Specifically, in each weekly survey, they were asked to describe the most troubling event that they experienced or witnessed while on a call over the past 7 days. Participants could skip this question if a specific event did not come to mind.

Negative Work Rumination

Rumination was measured with the four-item negative work rumination scale from Frone (2015), which was adapted to refer to the past week. Participants were asked to report the frequency with which they engaged in various work-related rumination behaviors over the past 7 days (1 = *never*; 5 = *always*). A sample item from this scale is "Over the past 7 days, how often have you replayed negative work events in your mind even after you left work?" The average weekly alpha reliability for this scale in the present study was .94.

Mental Exhaustion

Mental exhaustion was measured with six items from the Copenhagen Burnout Inventory that were adapted to the current population to reference "patients and/or their family members" (CBI; Kristensen et al., 2005). A sample item from this scale is "Over the past 7 days, it has drained my energy to work with patients and/or their family members." Each item referred to the past 7 days, and participants rated the degree to which they agreed with each item on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The average weekly alpha reliability for this scale in the present study was .94.

Sleep Quality

Participants rated their weekly sleep quality with one item from the Pittsburgh Sleep Quality Inventory (PSQI; Buysse et al., 1989). Specifically, participants were asked to respond to the following question: "Over the past 7 days, how would you rate your sleep quality overall?" (1 = *very bad*; 4 = *very good*).

Alcohol Consumption

Participants rated their weekly drinking behavior with one item from the Longitudinal Emergency Medical Technician Attributes and Demographic Study (LEADS) survey (Pirrallo et al., 2005). Specifically, participants were asked to respond to the following question:

> One standard drink = 12 oz. of beer, malt liquor, or wine cooler; 4 oz. of wine; a 1.5 oz. shot of liquor; or a mixed drink containing a shot of liquor. On average, how many standard drinks have you consumed over the past 7 days?

Response options were 0–1 per day, 2–3 per day, 4–5 per day, and more than 5 per day.

Analytic Approach

As this study hypothesizes within-subjects effects, path analysis in the multilevel structural equation modeling (MSEM) framework with robust standard errors was implemented with Mplus Version 8.0 (Muthén & Muthén, 1998–2012). This method accounts for the

nested structure of this data and allows for the study hypotheses to be tested simultaneously (Preacher et al., 2010).

Missing data were handled by using full information maximum likelihood (FIML) estimation. This approach utilizes the data of every participant that completed at least two weekly surveys and estimates the parameters and standard errors by giving more weight to the participants who completed the most surveys in the study. Simulation studies demonstrate that this is an effective way for handling missing data (Enders & Bandalos, 2001), and evidence suggests that this approach is less biased and more efficient than other common ways for dealing with missing data (Little et al., 2014).

Rumination and strain from the previous week ($t - 1$) were included as predictors of current week (t) rumination and strain. This helps to mitigate the potential impact of common method variance and enables us to interpret our results as a *change* in the level of rumination and strain from the past week[1] (see Beal, 2015). Further, to account for any spurious effects due to time, we controlled for survey week (e.g., Lanaj et al., 2020). All within-person estimates were modeled using random slopes, with the exception of the paths with control variables, which were modeled using fixed slopes (e.g., Foulk et al., 2019).

To test the cross-level moderated mediation effect, we included calling intensity as a Level 2 predictor of the within-person random slope between emotionally disturbing events and rumination. All Level 1 predictors (with the exceptions of survey week) were person-mean centered, and the Level 2 variable (calling intensity) was grand-mean centered (Enders & Tofighi, 2007). We used bias-corrected Monte Carlo parametric bootstrapping with 20,000 replications to create 95% confidence intervals (CIs) around our indirect effects, conditional indirect effects, and indices of moderated mediation in order to assess their significance (Preacher et al., 2010; Selig & Preacher, 2008).

Results

Emotionally Disturbing Event Descriptions

In addition to asking participants to complete the quantitative scales, we also gave participants an opportunity to share an example of an emotionally disturbing event that they witnessed/experienced during each week of the study, resulting in 468 open-ended event descriptions. This additional information provides more context around the types of events that individuals were experiencing over the course of the study. In order to code these data, we began with a deductive approach in which three industrial and organizational (I/O) psychology graduate students, as well as the first author, coded an initial set of 50 incidences according to a published inventory of the most common EMS critical incidences developed by Donnelly and Bennett (2014). During this initial coding phase, coders also generated a list of additional categories that consistently emerged within the initial 50 incidences, which led to the addition of 10 more coding categories. Then, the three I/O psychology graduate students continued to code the rest of the incidences, with each incident coded by two coders. Given that more than one category could be relevant to any particular incident, each coder was instructed to list all applicable categories, ordered by relevance. This process resulted in 79.67% of the incidences having at least one category match across the two coders. Any coding discrepancies were resolved by the first author. See Appendix A for all coding categories and frequencies.

Overall, 51% of the incidences reported fit into the most traumatic events for emergency medical professionals identified by Donnelly and Bennett (2014), such as encountering a child who was severely injured, seeing instances of elder neglect, or watching someone die. The rest of the incidences involved other traumatic events that were not explicitly identified by Donnelly and Bennett (2014), such as responding to a patient who had attempted suicide or encountering a patient who overdosed. Notably, 27% of all the incidences that were reported involved children either directly (e.g., incidences of child injury or death) or indirectly (e.g., incidences in which children witnessed a parent overdose on drugs).

Descriptive Statistics and Preliminary Analyses

See Table 1 for descriptive statistics and correlations of the study variables. The intraclass correlation coefficient, or ICC(1), for all focal study variables ranged from .45 to .71, suggesting there was substantial within-person variance (i.e., 29%–55% of the total variance) for each variable. Overall, the within-person correlations generally fit the expected relationships among study variables, with the exception of the relationship between weekly rumination and weekly alcohol use, which was not significantly different from zero ($r_{within} = .03$, $p > .05$). Further, it is interesting to note that at the *between-person* level, calling intensity and mental exhaustion were negatively related ($r_{between} = -.27$, $p < .01$), which aligns with the majority of callings research that finds being called to one's job is associated with positive outcomes overall.

We performed a multilevel confirmatory factor analysis (CFA) to assess the distinctiveness of our variables. Negative work rumination, emotionally disturbing events, and burnout were included at both the within-person level and between-person level. Calling intensity was included at the between-person level. We did not include alcohol consumption or sleep quality, as both of those variables were assessed with single items. Results of the multilevel CFA demonstrated good fit, $\chi^2(215) = 769.95$, $p < .05$, root-mean-square error of approximation (RMSEA) = .04, comparative fit index (CFI) = .95, Tucker–Lewis index (TLI) = .95, standardized root-mean-square residual $(SRMR)_{within} = .05$, $SRMR_{between} = .08$. Further, this model fit better than an alternative model where we loaded the negative work rumination, emotionally disturbing work, and burnout items onto one factor, $\chi^2(223) = 5535.02$, $p < .05$, RMSEA = .11, CFI = .56, TLI = .50, $SRMR_{within} = .18$, $SRMR_{between} = .14$; Satorra–Bentler $\Delta\chi^2(8) = 7303.50$, $p < .01$.

Main Effects and Mediation Effects

See Figure 1 and Table 2 for the parameter estimates of the multilevel path analysis. Results show that emotionally disturbing events were positively and significantly associated with negative work rumination ($\gamma = .42$, $SE = .03$, $p < .01$), after controlling for negative work rumination from the previous week. This suggests that on weeks that employees experienced more emotionally disturbing events, they engaged in more negative work rumination, thereby providing support for Hypothesis 1.

[1] All results remain significant and in the expected directions without controlling for prior week's rumination and strain.

Table 1
Descriptive Statistics and Correlations

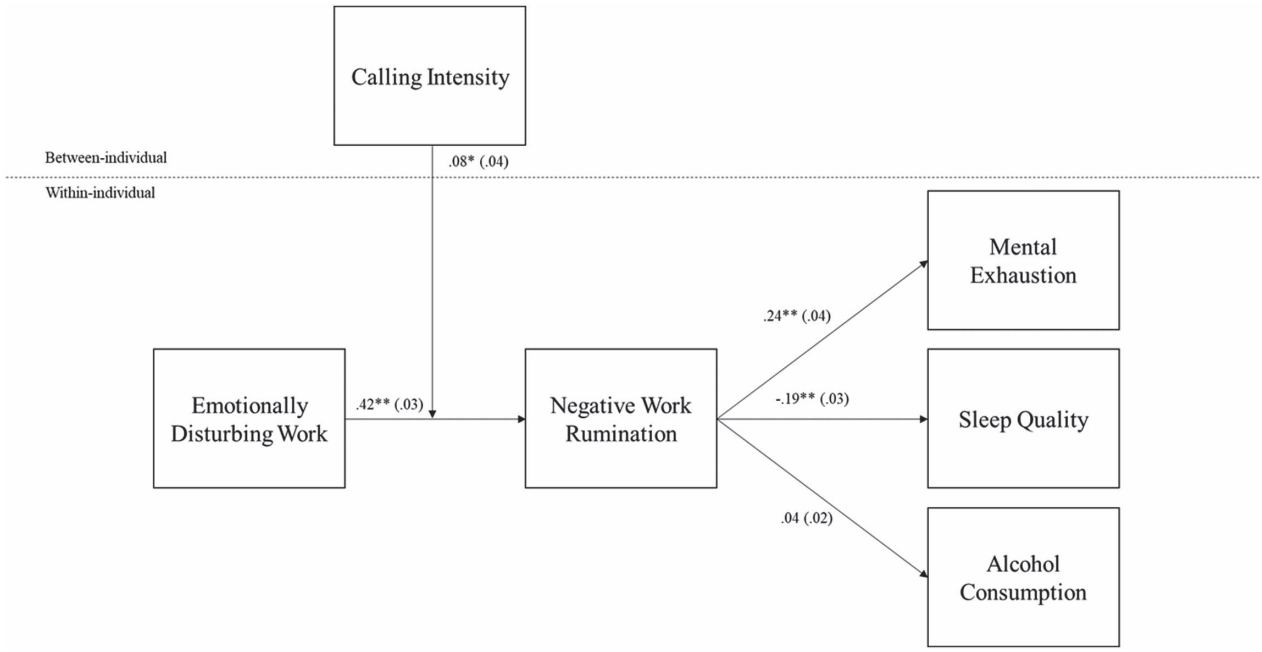
Variable	*M*	Within *SD*	Between *SD*	ICC(1)	1	2	3	4	5	6
1. Emotionally disturbing work	2.41	0.59	0.66	0.51	(.90)	.45**	.33**	−.27**	−.01	—
2. Negative work rumination	2.37	0.58	0.71	0.55	.77**	(.94)	.34**	−.30**	.03	—
3. Mental exhaustion	2.47	0.58	0.98	0.71	.62**	.67**	(.94)	−.42**	−.01	—
4. Sleep quality	2.44	0.54	0.55	0.45	−.44**	−.50**	−.24**	—	.03	—
5. Alcohol consumption	1.33	0.43	0.55	0.57	.16*	.25**	.16*	−.16*	—	—
6. Calling intensity	3.94	—	0.65	—	−.08	−.01	−.27**	.06	.01	(.84)

Note. ICC(1) = intraclass correlation coefficient. Correlations below the diagonal represent between-person correlations (N = 210–211). Correlations above the diagonal represent within-person correlations (N = 1,998). Coefficient α estimates of reliability are in parentheses on the diagonal. For within-person variables, the α reliability coefficients were averaged across the 10 weeks.
* $p < .05$. ** $p < .01$.

Regarding relationships between negative work rumination and each strain outcome (after controlling for strain from the previous week), results were aligned with the pattern of the correlations. Specifically, negative work rumination was significantly related to mental exhaustion ($\gamma = .24$, $SE = .04$, $p < .01$) and sleep quality ($\gamma = -.19$, $SE = .03$, $p < .01$), but was not significantly related to alcohol consumption ($\gamma = .04$, $SE = .02$, $p > .05$). These results suggest that on weeks that individuals ruminated about work, they experienced more exhaustion and worse sleep. Therefore, Hypotheses 2a and 2b were supported, but Hypothesis 2c was not supported.

Hypotheses 3a–c proposed that weekly negative work rumination will mediate the relationship between emotionally disturbing work each strain outcome. The indirect effects for negative work rumination as a mediator between emotionally disturbing events and mental exhaustion (unstandardized indirect effect = .010) and between emotionally disturbing events and sleep quality (unstandardized indirect effect = −.079) were each significant with 95% confidence intervals (CI_{95}) of [−.1056, −.0531] and [.0699, .1309], respectively. The indirect effect for negative work rumination as a mediator between emotionally disturbing events and alcohol

Figure 1
Results of the Multilevel Path Analysis



Note. Unstandardized coefficients are displayed, and the standard errors are in parentheses. Direct paths and controls (i.e., survey week, lagged criteria) were included in the analysis but were omitted from the figure for clarity. Level 2: N = 211; Level 1: N = 1998.
* $p < .05$. ** $p < .01$.

Table 2
Multilevel Path Model Results

Measure	Negative work rumination		Mental exhaustion		Sleep		Alcohol consumption	
	γ	*SE*	γ	*SE*	γ	*SE*	γ	*SE*
Intercept	2.37**	.05	2.38**	.07	2.42**	.04	1.31**	.05
Level 1 predictors								
Emotionally disturbing work	.42**	.03	.21**	.03	−.13**	.03	−.01	.03
Negative work rumination			.24**	.04	−.19**	.03	.04	.02
Level 1 controls								
Study week	−.02**	.01	.02**	.01	.00	.01	.00	.01
Prior week rumination ($t - 1$)	.03	.03						
Prior week mental exhaustion ($t - 1$)			.00	.03				
Prior week sleep quality ($t - 1$)					.02	.02		
Prior week alcohol consumption ($t - 1$)							.06	.05
Level 2 predictor								
Calling	−.01	.08						
Moderator								
Emotionally disturbing work × Calling	.08*	.04						
Pseudo-R^2	34%		25%		19%		18%	

Note. N (Level 1) = 1998; N (Level 2) = 211. Coefficients are unstandardized. Level 1 predictors were person-mean centered and the Level 2 predictor was grand-mean centered.
* $p < .05$. ** $p < .01$

consumption was not significant (unstandardized indirect effect = .018, CI_{95} [−.0000, .0362]). Thus, Hypotheses 3a–b were supported, but Hypothesis 3c was not supported.

Conditional Indirect Effects

Hypotheses 4a–c proposed that calling intensity moderates the indirect effects between emotionally disturbing events and each outcome through weekly negative work rumination. Calling intensity significantly moderated the first stage of each indirect effect, such that as emotionally disturbing events were related to higher levels of weekly work rumination when calling intensity was higher versus lower (γ = .08, SE = .04, $p < .05$). See Figure 2 for a depiction of this moderating effect at the highest and lowest levels of calling intensity. Further, following recommendations by Hayes (2015), we calculated three indices of moderated mediation (i.e., the coefficient for the product term multiplied by the second stage of the indirect effect).

Results of these analyses showed that the index of moderated mediation (IMM) was significant for mental exhaustion (IMM = .018, CI_{95} [.0006, .0383]), such that the positive indirect effect of emotionally disturbing events on mental exhaustion was stronger for those with higher (vs. lower) calling intensity. Conditional indirect effects at 1 *SD* above (unstandardized indirect effect = .112, CI_{95} [.0779, .1479]) and below (unstandardized indirect effect = .088, CI_{95} [.0592, .1205]) mean levels of calling intensity further illustrate this pattern. Therefore, Hypothesis 4a was supported. Further, the IMM was significant for sleep quality (IMM = −.014, CI_{95} [−.0306, −.0006]), such that the negative indirect effect of emotionally disturbing events on sleep quality was stronger for those with higher (vs. lower) calling intensity. Accordingly, examination of the conditional indirect effects at 1 *SD* above (unstandardized indirect effect = −.088, CI_{95} [−.1193, −.0592]) and below (unstandardized indirect effect = −.069, CI_{95} [−.0962, −.0456]) mean levels of calling intensity mirror this pattern of results. Therefore, Hypothesis 4b was supported. Finally, the IMM was not significant for alcohol consumption (IMM = .003, CI_{95} [−.0003, .0090]), thereby failing to support Hypothesis 4c.[2,3]

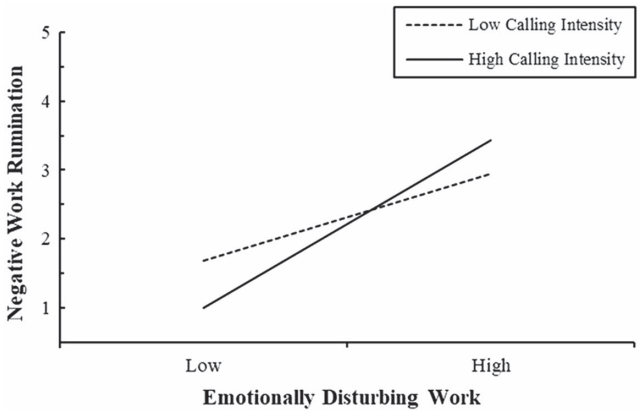
Supplemental Analysis

Although our results support our hypothesis that callings would moderate the relationship between weekly experience of disturbing events and rumination, it is important to note that one possible explanation for this moderating effect of calling intensity may be that individuals who are called to their jobs are simply more likely to self-select into the most challenging EMS units. In this case, it would not be the *calling intensity*, per se, that is driving the moderating effect, but rather it would be the *overall exposure to disturbing work* that is characteristic of their work unit that truly accounts for this effect. Indeed, this explanation would align with findings from Bunderson and Thompson (2009) that show called individuals are motivated to engage in "self-sacrifice" by taking on exceptionally arduous work roles and tasks in order to fulfill the duties of their calling. To examine this possibility, we reran our path analysis with the addition of person-level emotionally disturbing work (aggregated across the study weeks) as another cross-level moderator of the *a* path (i.e., weekly emotionally disturbing work to weekly rumination). Results of this analysis showed that person-level emotionally disturbing work did *not* moderate the within-

[2] We repeated the multilevel path analyses after filtering out those who did not drink at all throughout the course of the study (N = 36). All results remained significant and in the expected directions (including the moderating effect of callings and all indirect effects). Results of these supplementary analyses are available from the first author upon request.

[3] We retested our study model with emotionally disturbing events measured at Time 1 (t), rumination measured 1 week later ($t + 1$), and the outcomes measured another week later ($t + 2$). Results of this lagged model showed that none of the path estimates were significant. These results provide interesting insights into the notion that although called individuals experience worse health outcomes on the weeks of excessive emotionally disturbing events, these effects dissipate by the following week. Results of these supplementary analyses are available from the first author upon request.

Figure 2
Calling Intensity as a Moderator



Note. Moderating effect of calling intensity on the relationship between emotionally disturbing work and negative work rumination at extreme values of the moderator.

person relationship between weekly emotionally disturbing work and weekly rumination ($\gamma = .02$, $SE = .05$, $p > .05$), and that calling intensity did remain a significant moderator of this path ($\gamma = .10$, $SE = .04$, $p < .05$). Accordingly, we can conclude that self-selection into the most emotionally disturbing work roles does *not* account for the moderating effects of calling intensity on the relationship between weekly emotionally disturbing work and negative work rumination. Full results of this supplementary analysis are available from the first author upon request.

Discussion

Although most research suggests that living one's calling is associated with an array of health and well-being benefits, some recent studies suggest that callings may also have some drawbacks (Thompson & Bunderson, 2019). The present study aimed to investigate this discrepancy by considering the role of occupational callings on the relationship between emotionally disturbing work events and short-term negative health outcomes in a sample of paramedics. Results of this study showed that on weeks that individuals experience more emotionally disturbing events at work, they engage in higher levels of negative work rumination and experience worse health outcomes (i.e., worse sleep quality, more mental exhaustion) that same week. Further, calling intensity moderated these indirect relationships, such that the effects were stronger for those with a higher (vs. lower) calling intensity. These results remained consistent even after examining a series of potential alternative explanations. Ultimately, these results suggest that individuals who are called to their work may be particularly vulnerable to short-term negative health outcomes in emotionally disturbing work contexts.

Interestingly, an examination of the between-person correlations suggests that callings are *negatively* associated with aggregated mental exhaustion ($r = -.27$, $p < .01$), which is in alignment with the vast majority of the callings literature that shows that living one's calling is beneficial for employee well-being (Dobrow Riza et al., 2019). Indeed, this negative association at the between-person level suggests that individuals with a higher calling intensity are generally more resilient to work stressors over time in comparison to those with a lower calling intensity, possibly because frequent reflecting on *positive* work events may "make up" for negative work experiences (Sonnentag & Niessen, 2020) or because they may simply engage in more effective long-term coping mechanisms in comparison to those with a lower calling intensity. We urge future researchers to test these potential mechanisms. However, the results of our study underscore the importance of considering the health and well-being of called individuals in the short-term, especially during time periods that are consistently characterized by a higher-than-average number of emotionally disturbing events (e.g., during pandemics). In these situations, it is possible that the amount of stress that is encountered exceeds called employees' coping abilities, thereby making individuals with a higher calling intensity more susceptible to longer term, chronic disorders, as they respond more deeply and negatively to these experiences in comparison to those with lower calling intensity. In accordance with this postulation, a recent study (Jo et al., 2018) found that calling intensity strengthened the relationship between burnout and PTSD in a sample of firefighters.

Theoretical and Empirical Implications

Results of this study have several important implications for the organizational literature. For instance, we contribute to the growing occupational callings literature by shedding light on the "negative side" of fulfilling one's calling. That is, while most empirical research finds that calling intensity is associated with positive outcomes, evidence of the drawbacks of viewing one's work as a calling has also begun to emerge (e.g., Schabram & Maitlis, 2017). Indeed, recent theoretical perspectives, such as the work as a calling theory (Duffy et al., 2018), postulate that although those with a higher (vs. lower) calling intensity should have better health and well-being overall, these individuals may also be more susceptible to strain (e.g., exhaustion) as a result of their greater dedication and identification with their work role. A similar postulation was also presented by Sonnentag and Fritz (2015), as they noted that those who strongly identify with their work may have an especially difficult time detaching after the workday following high levels of job demands. By testing the moderating effect of calling intensity on the indirect relationship between emotionally disturbing work and strain (through negative work rumination), we contribute to the literature by elucidating the impact of calling intensity on employee health outcomes within a weekly timeframe. In particular, we showed that although calling intensity was associated with positive/neutral health outcomes at the person-level, it also has a more complicated role as a moderator. Specifically, individuals with a higher calling intensity were more sensitive to emotionally disturbing events and experienced *worse short-term* outcomes in the wake of such events. Interestingly, follow-up lagged analyses demonstrated that these effects do not hold over the course of 3 weeks, thereby further demonstrating the short duration of these effects. Ultimately, we postulate that the all-consuming desire to fulfill the mission of their calling makes it difficult for these employees to "shut off" the replaying of such negative events, thereby leading to short-term strain. Accordingly, we were able to contribute to theoretical perspectives on occupational callings by resolving some of the disparate findings of past research that have linked callings to both positive and negative employee outcomes (Thompson & Bunderson, 2019).

Further, this study contributes to our understanding of negative work rumination by assessing if it is simultaneously associated with one

volitional and two involuntary strain responses, namely psychological strain (i.e., mental exhaustion), physical strain (i.e., sleep quality), and behavioral strain (i.e., alcohol consumption). Overall, consistent with cognitive rumination theories such as the perseverative cognition model of stress (Brosschot et al., 2006), we found evidence that on weeks that paramedics encountered more emotionally disturbing work events, they were more likely to think about negative work events after the workday is over, which in turn was related to both physical strain (i.e., worse sleep quality) and psychological strain (i.e., greater mental exhaustion) that same week. Interestingly, we did *not* find the same pattern of results for our behavioral strain indicator, alcohol consumption. That is, paramedics did not engage in more drinking on weeks that they experienced more emotionally disturbing work ($r = -.01, p > .05$) or work-related rumination ($r = .03, p > .05$). However, it is interesting to note that the between-person correlations between alcohol consumption and both emotionally disturbing events ($r = .16, p < .05$) and work-related rumination ($r = .25$, $p < .01$) were significant, suggesting that employees who work in jobs that have higher levels of emotionally disturbing work (and who ruminate more) tend to consume more alcohol overall. This finding aligns with other studies that examine the between-person relationship between emotional demands at work and alcohol use (e.g., Frone, 2015; Shepherd et al., 2019).

One explanation for this discrepancy in the between- and within-person effects involving alcohol consumption is that it is only *chronic* exposure to emotionally disturbing events (and subsequent rumination) over time that leads individuals to engage in higher levels of alcohol consumption. In this case, it may not be any single instance of emotionally disturbing work that entices one to drink alcohol, but rather, it is the *cumulative* effect of emotionally disturbing work and rumination over time that leads to increased drinking behavior. Alternative explanations for the between-person relationship that cannot be ruled out are that individuals who drink more tend to self-select into jobs/positions with more emotionally disturbing work and/or tend to perceive their job to be emotionally disturbing. Future research needs to disentangle this finding in order to elucidate the mechanisms linking emotionally disturbing work to alcohol consumption.

Practical Implications

Regarding practical implications, findings from this study suggest that those with a high calling intensity are especially prone to the detrimental effects of emotionally disturbing work. This suggests that organizations (and especially those that employ helping professionals) should be particularly mindful of individuals who exhibit a high calling, as they may be at a higher risk of experiencing negative health outcomes in the wake of emotionally disturbing events. Further, organizations should take care to ensure that individuals who exhibit a high calling intensity are not taken advantage of at work (i.e., exploited) due to their extreme dedication (Bunderson & Thompson, 2009). That is, just because individuals perceive a calling to their work does not mean they are immune to negative outcomes from job stress. In fact, results of the present study suggest the opposite, and therefore organizations should consider providing these individuals with additional resources (e.g., breaks) and support to promote their health and well-being. This is especially important, given recent meta-analytic evidence that those with a higher calling intensity are highly engaged ($\rho = .44$) and committed ($\rho = .49$) to their work (Dobrow Riza et al., 2019), and it is therefore in organizations' best interest to do everything possible to retain and protect them. Indeed, the rapidly growing turnover rates within the paramedics profession provide a further sense of urgency to understand this issue (Mosher & Mahbubani, 2020).

Additionally, results of this study suggest organizations can help lessen the negative effects of emotionally disturbing work by reducing the likelihood that employees will engage in negative work rumination. Empirical evidence suggests that mindfulness (i.e., "receptive attention to and awareness of present events and experience"; Brown et al., 2007, p. 212; Good et al., 2016) can significantly reduce ruminative thoughts (e.g., Raes & Williams, 2010). In fact, a recent randomized wait-list control trial showed that an internet-based mindfulness training intervention significantly reduced employees' work-related rumination and fatigue (Querstret et al., 2018). Therefore, organizations may consider providing mindfulness training to their employees so that individuals are better equipped to cope with the stress that comes with emotionally disturbing work. Seeing as differences in calling intensity affect the stressor–rumination relationship, it would be interesting to examine the effects of mindfulness training on those with high versus low calling intensity.

In addition to the aforementioned organizational approaches, individual employees can also engage in efforts to proactively reduce the likelihood of ruminating about negative work events. For instance, in addition to engaging in self-initiated mindfulness activities (Ebert et al., 2016), research suggests that detachment from work-related thoughts may also be facilitated by taking time to socialize with friends and family, participating in hobbies or other leisure activities, or engaging in physical exercise (Feuerhahn et al., 2014).

Limitations and Suggestions for Future Research

Though this study has many important implications, it is not without limitations. For instance, it is important to recognize that all measures in this study were self-reported, and therefore there is some concern of common method bias. Indeed, it is possible that common method bias was responsible for amplifying the relationships in the mediation paths when data were collected at the same time. Such biases are less likely to persist over weeks, which may have contributed to the lack of significant effects in our follow-up lagged analyses. However, it should be noted that it is unlikely that common method bias would have produced the moderator effects (Evans, 1985; Siemsen et al., 2010). Further, adding the lagged ($t - 1$) measures to analyses helps control for sources of common method effects. Still, it would be optimal for future studies to incorporate additional sources of data. For instance, researchers should consider incorporating objective health data sources, such as blood pressure monitors, actigraphy, and cortisol in order to better understand the physiological effects of emotionally disturbing events. Additionally, we encourage researchers to gather data from other sources, such as spouses for instance, to gather measures of employees' exhaustion levels and alcohol consumption.

It is also important to acknowledge that this study depended on retrospective recall, as participants were asked each week to recall events, rumination, and strain that occurred over the past 7 days. Further, the response scales used to measure emotionally disturbing events and rumination were broad (ranging from *never* to *always*), which may have limited the variance that we were able to capture with these measures. A related limitation is that the weekly timeframe, while appropriate because of the length and frequency of paramedics' shifts and because of the low base rate of emotionally disturbing events, is not

suited to test the duration of effects. That is, the effects of emotionally disturbing work on the paramedics may well last more than a few hours or a day (as they were captured in a weekly study), but the present study was not suited to examine how long these effects last. Future research should build upon this research by measuring emotionally disturbing work events as they occur (i.e., experience sampling; Fisher & To, 2012) as well as the pattern of proximal responses (e.g., the following night's alcohol consumption and sleep), by using more refined rating scales (e.g., having participants report the actual number of emotionally disturbing events that they encountered during the past 7 days), and by examining the pattern of their effects over time (Dormann & Van de Ven, 2014). For instance, it would be helpful to assess the cumulative effects of emotionally disturbing events beginning from when an individual starts working in EMS. Another idea would be to track a person's experiences each day for several days after a particular emotional event in order to see how long it takes one to recover.

Another limitation of our study design relates to the fact that we measured all weekly variables in one survey each week. Accordingly, we are unable to rule out the possibility of reverse causality, such that a background level of strain (e.g., low sleep quality) could cause individuals to interpret work events as more emotionally disturbing. However, we note that the types of events that are being captured in our study are less subjective (e.g., a patient died or they did not) than other, more ambiguous events that are open for interpretation (e.g., whether or not one perceives an instance of incivility). Indeed, the type of events that were reported by participants in their qualitative descriptions suggest that they based their assessments of emotionally disturbing work on discrete, objective events. Still, this is a limitation of our study, and we encourage future research to explore the impact of emotionally disturbing events (and the potential for reverse causality) with time-separated measures. Another methodological limitation is that by examining calling as a cross-level moderator, we are unable to disentangle the effects of timing (short- vs. long-term) from the effects of the theoretical role (predictor vs. moderator). Future studies could compare the short- and long-term effects of callings, as well as the predictor versus moderator effects (moderating the effects of negative events on well-being) of calling.

Further, our study only included one mechanism (i.e., negative work rumination) and just three possible strain outcomes for emotionally disturbing work. Seeing as there is relatively little known about the effects of emotionally disturbing work, future studies can build upon the present study by examining alternative mediators (e.g., negative affect or ego depletion), and by expanding the outcomes to include other behavioral strains (e.g., counterproductive work behavior, or unhealthy eating, physical activity), attitudes (e.g., job satisfaction, or intention to turnover), or other physical strains (e.g., physical symptoms). We also recommend that future studies test our model with a wider range of occupations to examine whether our findings generalize to occupations outside of emergency services.

Finally, although called individuals typically seem to fare better in the long-term (as evidenced by our person-level correlations, as well as the majority of research within the occupational callings domain that show living a calling is associated with positive health and well-being outcomes; Thompson & Bunderson, 2019), our multilevel path analysis results show that they tend to fare *worse* in the short-term when they experience a lot of emotionally disturbing work events. Accordingly, we postulate that if called individuals are exposed to so many emotionally disturbing events that their capacity to cope is exceeded (or that are too extensive to be counteracted by positive work events), they may be more prone to psychological disorders, such as PTSD. We call upon future researchers to empirically investigate this possibility.

Conclusion

In the present study, we demonstrated in a sample of paramedics that emotionally disturbing work is associated with negative work rumination, which in turn links to strain outcomes (mental exhaustion and sleep quality) at the weekly level. Results also showed that paramedics with strong calling intensity were particularly vulnerable to rumination on weeks that were characterized by more emotionally disturbing work. Overall, this research builds upon previous work by elucidating the mechanisms linking emotionally disturbing work events to short-term strain and by demonstrating the conditions under which perceiving work as one's calling may exhibit a "negative side." Ultimately, the results of this study will help to elucidate the actions that employees and organizations can take to alleviate the negative outcomes related to emotionally disturbing work within helping professions and possibly beyond.

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Appendix

Categories and Frequencies of Qualitative Event Descriptions

Categories	Frequency	% of events
The paramedic encountered a patient who experienced a medical emergency not already listed (e.g., seizure, stroke).	77	16.5%
The paramedic encountered a patient who experienced cardiac arrest.	66	14.1%
The paramedic encountered a patient who was severely injured.	61	13.0%
The paramedic encountered the body of someone recently dead.^	51	10.9%
The paramedic encountered a patient who was experiencing a severe illness/disease.	51	10.9%
The paramedic saw someone dying.^	45	9.6%
The paramedic encountered a patient who overdosed.	40	8.5%
The paramedic encountered a patient or family member or bystander who was rude/verbally aggressive.	37	7.9%
Other event that did not fit into any of the above categories.	29	6.2%
The paramedic encountered an elderly person who was severely abused or neglected or in dire need of medical attention because of abuse or neglect.^	25	5.3%
The paramedic had to console the victim's family, friends, and/or bystanders.	24	5.1%
The paramedic was not adequately prepared for the call (e.g., given misinformation, insufficient resources, tools, or permissions).	23	4.9%
The paramedic encountered a patient who attempted suicide or was suicidal.	20	4.3%
The paramedic was assaulted by a patient.^	19	4.1%
The paramedic encountered a child that had been accidentally severely injured.^	18	3.8%
The paramedic encountered a suicide victim.^	18	3.8%
The paramedic encountered a child who was severely neglected or in dire need of medical attention because of neglect.^	16	3.4%
The paramedic encountered a patient who was severely burnt.^	16	3.4%
The paramedic responded to a scene involving family, friends, or others known to the crew.^	13	2.8%
The paramedic made a death notification.^	12	2.6%
The paramedic encountered a child that had been accidentally killed.^	10	2.1%
The paramedic encountered a patient who COULD have been severely injured (i.e., near-miss).	10	2.1%
The paramedic encountered a mutilated body or human remains.^	6	1.3%
The paramedic encountered an adult who had been badly beaten.^	5	1.1%
The paramedic was present when a fellow emergency medical technician (EMT)/paramedic was seriously injured.^	5	1.1%
The paramedic encountered a child who had been sexually assaulted.^	4	0.9%
The paramedic encountered a decaying corpse.^	4	0.9%
The paramedic was trapped in a potentially life-threatening situation.^	4	0.9%
The paramedic encountered a child who had been badly beaten.^	3	0.6%
The paramedic threatened with a gun or other weapon.^	3	0.6%
The paramedic encountered an adult who had been sexually assaulted.^	2	0.4%
The paramedic exposed to a life-threatening toxic substance.^	2	0.4%
The paramedic had to respond to a large-scale disaster.^	2	0.4%
The paramedic made a mistake that lead to the serious injury or death of a patient.^	2	0.4%
The paramedic encountered a child that had been murdered.^	1	0.2%
The paramedic encountered a drowning victim.^	1	0.2%
The paramedic exposed to serious risk of aids or other life-threatening diseases.^	1	0.2%
The paramedic had life endangered in a large-scale disaster.^	1	0.2%
The paramedic responded to a mass casualty incident (MCI).^	1	0.2%
The paramedic responded to an aggressive crowd or riot.^	1	0.2%
The paramedic saw animals that had been severely neglected, intentionally injured, or killed.^	1	0.2%
The paramedic was in a serious car accident with an ambulance or other emergency response vehicle.^	1	0.2%
The paramedic was seriously injured.^	1	0.2%
The paramedic was taken hostage.^	1	0.2%

Note. There were 468 event descriptions. Note that each event description could be coded into more than one category, and therefore the percentages do not add up to 100%. ^ Category that was included in the taxonomy developed by Donnelly and Bennett (2014). Four categories in Donnelly and Bennett (2014) taxonomy did not fit with any of the event descriptions and therefore had a frequency of zero. Those four categories were encountering a sudden infant death syndrome (SIDS) death, receiving serious threats toward loved ones as retaliation for their work in EMS, being present when a fellow EMT/paramedic was killed, and being seriously beaten.

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