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Surviving busy season: Using the job demands-resources model to investigate coping mechanisms

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Abstract

Fatigue and burnout are root causes of audit quality issues and turnover. Leveraging the job demands-resources theory, we investigate whether two mechanisms can reduce accountants' fatigue and, in turn, improve audit quality. We conduct a field study of public accountants during both normal and busy season work periods, collecting bi-daily logs to examine whether the use of microbreaks (i.e., brief respite activities) as a job crafting mechanism and/or the receipt of supervisory support as a job resource lessen end-of-day fatigue. We posit and find that engaging in microbreaks is associated with reduced end-of-day fatigue within busy season. Similarly, we posit and find that higher levels of daily supervisory support during busy season are associated with lower end-of-day fatigue. However, neither of these mechanisms is associated with lower end-of-day fatigue during normal work periods. Our results also indicate that these two mechanisms function as complements during busy season, with either one significantly reducing end-of-day fatigue, but both together having an interactive effect. Further, end-of-day fatigue during busy season reduces sleep quality, which increases accountants' fatigue the following morning. In a follow-up experiment, we consistently find evidence that a 1-min microbreak reduces fatigue and that this reduction directly translates into improved error detection.

KEYWORDS

audit quality, busy season, fatigue, job demands-resources theory, microbreaks, supervisor support

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Survivre à la haute saison : étude des mécanismes d'adaptation à travers le modèle exigences-ressources de l'épuisement professionnel

Résumé

La fatigue et l'épuisement professionnel représentent des causes profondes des problèmes de qualité de l'audit et du roulement du personnel. En se basant sur la théorie exigences-ressources de l'épuisement professionnel, les auteurs se demandent si deux mécanismes peuvent alléger la fatigue des experts-comptables et, par conséquent, améliorer la qualité de l'audit. Une étude de terrain a été menée auprès d'experts-comptables pendant les périodes de travail normales et achalandées. En recueillant des notes biquotidiennes, les auteurs examinent si les micropauses (c'est-à-dire de brefs moments de répit) allègent la fatigue en fin de journée en agissant comme un mécanisme de façonnage de l'emploi et/ou comme un dispositif de soutien du superviseur comme ressource professionnelle. Les auteurs supposent et constatent qu'en haute saison, les micropauses sont associées à une moins grande fatigue en fin de journée. De même, ils supposent et constatent qu'en haute saison, le soutien accru du superviseur au quotidien est associé à une moins grande fatigue en fin de journée. Toutefois, aucun de ces mécanismes n'est associé à une moins grande fatigue en fin de journée pendant les périodes de travail normales. Ces résultats indiquent également que ces deux mécanismes fonctionnent de manière complémentaire en haute saison, chacun allégeant considérablement la fatigue en fin de journée, mais tous deux conduisant à un effet d'interaction. De plus, la fatigue en fin de journée pendant la haute saison diminue la qualité du sommeil, entrainant une plus grande fatigue chez les comptables le lendemain matin. Une expérience complémentaire fournit des données indiquant qu'une micropause d'une minute allège la fatigue, ce qui se traduit directement par une amélioration de la détection d'erreurs.

MOTS-CLÉS

fatigue, haute saison, micropauses, qualité de l'audit, soutien du superviseur, théorie exigences-ressources de l'épuisement professionnel

JEL CLASSIFICATION

M40, M41, M42, J24, J28

1 | INTRODUCTION

Cognitive fatigue (hereafter, "fatigue") in the workplace has received growing attention as professionals across industries experience rising levels of burnout (AICPA, 2019; Murphy, 2021), a

problem exacerbated by the increasing levels of remote work post-pandemic (Payton, 2023; Tsipursky, 2023). Public accountants routinely experience and struggle with deadline pressures, long hours, and significant workloads (G. B. Bennett et al., 2015; Buchheit et al., 2016; Christensen et al., 2021). These job demands lead to high levels of fatigue and burnout, which can adversely affect audit quality in the short term and increase turnover in the long term (Hurley, 2019; Knechel et al., 2021). In fact, audit regulators suggest that workplace-induced fatigue is a root cause of audit quality issues (Hanson, 2013; PCAOB, 2024). Given these concerns, we examine mechanisms that may alleviate public accountants' (hereafter, "accountants") daily fatigue.

Relying on the job demands-resources (JD-R) model and theory, as well as theory on effort recovery and organizational support, we examine the relationships among accountants' job demands, their fatigue, and two factors that could act as coping mechanisms: microbreaks (a job crafting strategy) and supervisory support (a job resource). JD-R theory posits that individuals will face job demands that can induce job strain (e.g., fatigue), and initiating job crafting (i.e., proactively making changes to the work or task environment) or receiving a job resource (e.g., feedback, rewards, support) may be necessary to alleviate such strain (Demerouti et al., 2001). However, research examining the effect of concurrent demands on job strain is limited (Bakker & Demerouti, 2017; Cham et al., 2021). It is also not clear whether job crafting or job resources are effective under extreme job demands like those occurring during an accountant's busy season.[1] The public accounting work environment presents a unique context to test and extend JD-R theory because it predictably alternates between "normal" work periods (i.e., lower demands, stable workloads/hours, low stress) and "busy season" (i.e., higher demands, extreme workloads/hours, high stress), where extreme conditions can impair well-being and negatively impact audit quality (Christensen et al., 2021; Hux et al., 2024; Sweeney & Summers, 2002).

Further, accounting research focuses primarily on how characteristics of busy season negatively impact accountants' attitudes and audit quality (Christensen et al., 2021; Persellin et al., 2019), while research on strategies that can mitigate these effects is scarce. Thus, we explore a mechanism that can be enacted by individual accountants, whereby they can voluntarily pursue *microbreaks* during their workday to briefly shift their attention away from work tasks to promote recovery (Kim et al., 2017; Steidle et al., 2017). We also consider *supervisory support*, a mechanism enacted by supervisors that entails the degree to which employees perceive that their supervisors help them and show care and appreciation towards them during the workday (Rhoades & Eisenberger, 2002).

According to effort recovery theory (ERT; Meijman & Mulder, 1998), engaging in activities that promote recovery improves employees' task performance and reduces negative affect and stress (van Hooff et al., 2011). Prior research finds that more frequent microbreaks improve affect, work engagement, and performance, but do not examine fatigue or consider work environments with concurrent job demands (Kim et al., 2017, 2018; Steidle et al., 2017). Our setting allows us to extend prior research by examining the efficacy of microbreaks in mitigating two types of concurrent job demands: long hours and heavy workload. Because JD-R theory proposes that job resources become more salient when job demands are high (Bakker et al., 2023), we expect that microbreaks will have a differential effect depending on the work period. Specifically, we expect that more (vs. less) microbreaks during busy season will be associated with greater reductions of end-of-day fatigue than during normal work periods.[2]

[1]Busy season (also referred to as "peak season") is a period in which auditors and tax professionals face pressure to meet deadlines associated with issuing audit reports and tax returns, respectively (Buchheit et al., 2016; López & Peters, 2012).

[2]Throughout the paper, we use three separate variations of the term fatigue. We use fatigue (without any additional specification) when talking about the general construct of cognitive fatigue. We also refer to end-of-day fatigue or next-day fatigue (i.e., fatigue at the start of the next day) when discussing the variables of interest in our field study.

Next, we investigate whether supervisory support, a tacit managerial skill (Bol et al., 2018), is sufficient to mitigate accountants' end-of-day fatigue. Organizational support literature identifies supervisory support as a key driver of employee performance and stress management at work (Bakker et al., 2005; Eisenberger et al., 1986). Evidence in accounting suggests that supervisory support can offset the negative effects of certain work stressors (e.g., negative supervisor experiences; Andiola et al., 2021; Dalton et al., 2015). Although supervisors may find it difficult to provide effective support during busy season due to their own job demands (Jefferson & Andiola, 2024), we predict a differential effect depending on the work period. That is, we expect that higher (vs. lower) levels of supervisory support will be associated with greater reductions in end-of-day fatigue during busy season relative to normal work periods.

In further analysis, we explore the joint effects of microbreaks and supervisory support during busy season. The JD-R model suggests that job resources may moderate the effects of job demands on outcomes like fatigue and performance (Bakker et al., 2004, 2023), but few studies simultaneously examine multiple factors in the model to consider joint effects. Some research indicates that providing supervisory support may allow subordinates to feel more comfortable using personal strategies to cope with stress during their workday (Bakker et al., 2005; Bakker & Demerouti, 2017), suggesting both may co-occur and have an interactive effect. Finally, we examine the downstream impact of fatigue on well-being and audit quality. Specifically, we investigate the potential carryover effects of end-of-day fatigue (Hurley, 2017), where end-of-day fatigue may reduce sleep quality and, in turn, increase next-day fatigue. Then, we investigate the effect of fatigue on audit quality (Hurley, 2019), including whether microbreaks can mitigate this detrimental effect.

We conduct a field study and an experiment to test our predictions and improve our causal inferences.[3] First, we perform a field study that uses a series of bi-daily logs to track the daily experiences of 44 public accountants (audit and tax) employed at US locations of Big 4, national, regional, and local firms. We collect 255 observations across two time periods: (1) in November 2020, when working hours and workloads are relatively normal and (2) in late January 2021, a busy season period. We begin each period by collecting information about accountants' work environment, work experience, and demographics. Then, for 3 consecutive days, we ask participants questions each morning to assess their previous night's sleep quality and level of morning fatigue. Each evening, we ask questions to assess their daily microbreak activities, perceived level of supervisory support, and end-of-day fatigue. Second, we conduct a between-subjects randomized controlled experiment across two samples—93 graduating accounting students and 86 workers on Amazon's Mechanical Turk (MTurk)—to investigate the effect of microbreaks on reducing fatigue and, in turn, improving the detection of seeded errors (i.e., audit quality) in an invoice testing task. We manipulate microbreaks using a 1-min relaxation video (absent vs. present). All participants complete a writing task to induce fatigue (Bhaskar et al., 2023; Yam et al., 2014) and then receive their assigned manipulation before completing the invoice testing task.

Our field study reveals that both microbreaks and supervisory support are associated with significantly lower levels of end-of-day fatigue during busy season compared to the normal work period. Additional analysis further indicates that having high levels of both microbreaks and supervisory support is associated with the lowest levels of end-of-day fatigue. Thus, while each mechanism alone can effectively reduce end-of-day fatigue, they appear to function as complements during busy season. Moreover, path model analysis shows that accountants' end-of-day fatigue during busy season predicts their next-day fatigue, and this effect is mediated by their sleep quality that night. Finally, the results of our experiment not only provide novel

[3]In addition to these empirical studies, we conducted six post hoc semi-structured interviews with public accounting professionals, including two former and three current Big 4 audit and tax partners (two are in partner-in-charge roles of offices or practices), and a chief operating officer at a regional firm. These interviews aimed to gather their perspectives on fatigue and audit quality during busy season and to determine whether they would support and incorporate our research findings at their firms. We include quotes from these interviews in our paper to provide practical insights on these issues.

evidence of a causal link between fatigue and audit quality but also show that microbreaks improve audit quality (i.e., error detection) by reducing fatigue.

Our study makes several theoretical and practical contributions. First, we contribute to the literature on the effects of public accountants' work environments on burnout and audit quality (Buchheit et al., 2016; Christensen et al., 2021; Knechel et al., 2021) and extend the literature on coping mechanisms that can mitigate such issues (Almer & Kaplan, 2002; Jones et al., 2010; Smith et al., 1993). Specifically, we build on the research that associates proxies for fatigue with audit quality (e.g., auditor workload; Heo et al., 2021) and experimental studies that find depleting tasks affect auditor performance (Hurley, 2019; Mullis & Hatfield, 2018) by providing causal evidence that fatigue adversely affects audit quality, and that microbreaks can mitigate this effect. Thus, our study contributes knowledge of the effect of fatigue on audit quality and provides direct evidence of on-the-job coping mechanisms that can mitigate such an effect.

The results of our study also advance JD-R theory. Building on prior knowledge related to the JD-R model (Bakker et al., 2023; Bakker & Demerouti, 2017) and capitalizing on unique features of the public accounting environment, we find that microbreaks (i.e., a job crafting mechanism) and supervisory support (i.e., a key job resource) are beneficial during busy season when there are concurrent demands. Further, our study provides initial evidence of a *new* path in the JD-R model, where job crafting (i.e., microbreaks) can *directly* moderate the relationship between job demands (i.e., busy season) and strain (i.e., end-of-day fatigue). Finally, our field study design differentiates our study from prior accounting research by examining accountants' experiences via bi-daily logs during two distinct work periods. While few accounting studies adopt this method, it affords us a greater understanding of busy season beyond what may be inferred through archival or survey methods. For example, we show how end-of-day fatigue affects sleep quality and, in turn, next-day fatigue. Our experiment then advances this understanding by showing the causal link between microbreaks, fatigue, and a direct audit quality measure.

Addressing mechanisms that can improve accountants' well-being during busy season is also of practical relevance, given both regulators' and firms' concerns about issues of audit quality, as well as rising concerns surrounding burnout and retaining talent in the profession (Khavis & Krishnan, 2021; PCAOB, 2024). All six post hoc interviewees (see Footnote 3) indicate that the topic is timely and relevant and that their firms would support implementing these types of coping mechanisms through firm training and/or engagement team initiatives.

2 | THEORY AND HYPOTHESIS DEVELOPMENT

2.1 | Applying JD-R theory to the public accounting work environment

JD-R theory is based on the idea that the working conditions of any occupation can be characterized as one of two broad types: job demands and job resources. Job demands are physical, psychological, social, or organizational aspects of a job (e.g., work overload, high pressure). Managing these demands requires effort and leads to job strain (e.g., fatigue, health issues), which in turn negatively affects work outcomes (e.g., poor performance) (Bakker et al., 2005; Bakker & Demerouti, 2017; Demerouti et al., 2001). Prior research suggests that job demands and/or their impact on strain can be alleviated by providing job resources, which are aspects of the job that help achieve goals and reduce the cost of job demands (e.g., feedback, rewards, support) (Bakker & Demerouti, 2017).[4] Further, individuals can engage in job crafting by making

[4]JD-R theory also proposes that personal resources, defined as an individual's beliefs regarding how much control they have over their work environment (e.g., optimism, self-efficacy), can reduce job strain (Bakker & Demerouti, 2017). These resources are outside the scope of this study.

proactive changes to job tasks and/or their work environment to alleviate job strain (Tims et al., 2012). For example, individuals can reduce their workload by using artificial intelligence tools to minimize job demands or can implement processes to proactively seek feedback to increase job resources. While prior research examines how combinations of individual job demands and resources interact to affect work outcomes (Bakker et al., 2005; Schaufeli & Bakker, 2004), studies examining how various demands concurrently affect strain are rare (Bakker & Demerouti, 2017; Cham et al., 2021).

Bakker et al. (2023) propose that job resources may become most salient when job demands are high, amplifying their impact on reducing strain, but few studies examine this proposition. Thus, job resources should theoretically mitigate job strain to a greater extent during accountants' busy season, while the benefits of resources may not be as noticeable during normal work periods due to insufficient strain. However, this is an open empirical question, as prior JD-R literature does not address changes in the efficacy of job crafting and job resources based on the nature of job demands. In our study, we examine how microbreaks and supervisory support can function as job crafting and job resources, respectively, under normal versus busy season demands to reduce job strain in the form of fatigue and, in turn, improve key work outcomes (i.e., next-day fatigue and audit quality). We rely on the JD-R model presented in Bakker and Demerouti (2017, p. 275) to guide our theoretical predictions and study. This model theorizes that job demands (e.g., high workload and long hours) increase job strain (e.g., cognitive fatigue), and this relationship can be moderated by job crafting (e.g., microbreak activities) and/or job resources (e.g., supervisory support). In our setting, we investigate the effects of job strain (e.g., cognitive fatigue) on three separate outcomes: sleep quality, next-day fatigue, and audit quality (e.g., error detection).

2.2 | Effect of microbreaks on fatigue

Organizational behavior and psychology studies examine various forms of employee breaks (e.g., vacations, weekends, after-work activities) and their association with job performance, exhaustion, and well-being (A. Bennett et al., 2017; Fritz & Sonnentag, 2006; Sonnentag & Zijlstra, 2006). However, over the past decade researchers started investigating employees' recovery *during* their workday (Bosch & Sonnentag, 2019; Hunter & Wu, 2016; Kim et al., 2017). These studies hypothesize that taking microbreaks may be one strategy to facilitate employees' recovery throughout their workday. Microbreaks are voluntary breaks, ranging from a few seconds to 5 min, in which employees engage in respite activities that briefly shift their attention away from their work tasks (Kim et al., 2017). Prior literature identifies four types of microbreaks: relaxation, nutrition, social, and cognitive activities (Kim et al., 2017).[5]

We leverage ERT (Meijman & Mulder, 1998) to develop our hypothesis related to microbreaks as a job crafting mechanism. While the JD-R model only proposes an indirect effect of job crafting, we predict a direct moderating role of job crafting based on ERT. ERT posits that individuals exert effort to meet task demands and that continuous exertion results in acute load reactions such as negative affect, fatigue, and stress (van Hooff et al., 2011). However, if individuals stop working and engage in activities that promote recovery, these acute load reactions can theoretically be reversed, and individuals can return to their baseline state. As a result, ERT suggests that the timing of recovery from work-related acute load reactions is important, and microbreaks offer employees an opportunity to engage in on-demand recovery

[5]Relaxation activities refer to the pursuit of nonwork physical and psychological activities, such as stretching or listening to music. Nutrition activities include the consumption of snacks and beverages. Social activities involve communicating with others about nonwork matters. Cognitive activities redirect cognitive attention to activities that offer a mental break from work demands, such as reading online material. See the Supplementary Appendix for further discussion and analysis pertaining to the four types of microbreaks.

(Kim et al., 2018). Absent sufficient recovery activities, load reactions will accumulate throughout the day in the form of fatigue and/or strain as individuals exert effort to meet task demands. Further, prolonged exposure to work demands without adequate recovery can cause "slow unwinding" after work (Meijman & Mulder, 1998), where these negative reactions persist for the rest of the day and/or carry over to subsequent days (Hurley, 2017; Sonnentag et al., 2014). Taking microbreaks during the workday may decrease this strain and reduce the possibility of carryover effects (Hunter & Wu, 2016; Kim et al., 2017).

Organizational behavior and psychology studies indicate that microbreaks have several positive effects, including reducing negative affect (Kim et al., 2017), improving performance and positive affect (Kim et al., 2018), and increasing work engagement (Kim et al., 2021; Kuhnel et al., 2017). However, none of these studies examine a cumulative factor like fatigue, which may be more challenging to reverse, and the unique features of the accounting setting allow us to investigate conditions under which microbreaks may or may not be beneficial.

While prior research suggests that microbreaks may reduce accountants' end-of-day fatigue in both normal and busy season periods, we expect to observe a more pronounced effect during busy season for several reasons. First, JD-R theorists propose that resources are most salient and beneficial when job demands are high (the boost hypothesis; Bakker et al., 2023). In such instances, research finds that job resources can boost work engagement (Bakker et al., 2007; Tadic et al., 2015). Although pressures associated with busy season may prevent accountants from self-initiating microbreaks, or microbreaks may be insufficient to meaningfully mitigate cumulative end-of-day fatigue, JD-R theory and prior ERT studies suggest otherwise. These theories indicate that microbreaks should help mitigate negative effects, even under busy season conditions.

Further, and specific to the public accounting context, both interns and staff accountants undergo a socialization process that acclimates them to professional norms that include expectations for long hours and developing high workload thresholds (Anderson-Gough et al., 2001; Covaleski et al., 2021; Sweeney & Summers, 2002). Once accountants establish high work thresholds, microbreaks may still be beneficial to reduce momentary fatigue during normal work periods but may not alter accumulated daily fatigue when levels are likely already low. This reasoning also helps to explain why prior microbreak studies involving nonprofessional employees, who likely have not developed a resistance to job demands, find microbreaks beneficial on end-of-day outcomes (e.g., work engagement, negative affect) even during periods of consistent and normal hours (Kim et al., 2017; Kuhnel et al., 2017).

Collectively, prior research leads us to expect that microbreaks will have a more notable effect on accountants' end-of-day fatigue during busy season. Thus, we propose the following:

> **Hypothesis 1 (H1).** More frequent microbreaks will be associated with greater decreases in end-of-day fatigue during busy season than during a normal work period.

2.3 | Effect of supervisory support on fatigue

Organizational support theory indicates that supervisory support at work is fundamental to employee performance, job satisfaction, and stress management (Eisenberger et al., 1986; Rhoades & Eisenberger, 2002) and is an instrumental resource that employees value when job demands are high (Bakker et al., 2005). As such, supervisory support functions as a job resource in the JD-R model. Prior literature conceptualizes supervisory support as employees' beliefs that their supervisors value their contributions and care about their well-being (Eisenberger et al., 1986, 2001). The buffering hypothesis (Cohen & Wills, 1985) suggests that social support can act as a "stress buffer" for individuals, reducing feelings of stress and anxiety related to a stressful event. Organizational behavior research supports this contention by finding that feelings of support can offset the effects of negative work stressors on employees' task

performance and job satisfaction (Hobman et al., 2009; A. Lee et al., 2019). More specifically, leaders who are attentive to followers' needs and concerns can better shield employees from job burnout and strain (Hildenbrand et al., 2018; Seiger & Wiese, 2009).

Consistent with organizational behavior research, accounting studies also find that supervisory support and other tacit managerial skills can benefit accounting subordinates. For example, supervisors with higher levels of tacit skills better develop subordinates with these skills, which improves their firm commitment (Bol et al., 2018). Furthermore, Andiola et al. (2021) and Dalton et al. (2015) indicate that positive coaching experiences with a supervisor and/or mentor can buffer the detrimental effects (e.g., turnover intentions) of a poor supervisory experience. These studies support the proposition that supervisory support can moderate employees' adverse experiences (Cohen & Wills, 1985) and indicate that accounting supervisors can positively impact the work experiences of their subordinates beyond the direct effects of supervision on work quality (Andiola et al., 2019; Andiola & Bedard, 2018).

While supervisors may find it difficult to support their subordinates when their job demands also increase during busy season (Jefferson & Andiola, 2024), we expect that providing higher levels of supervisory support when subordinates are most in need will have a greater effect on fatigue. That is, we do not necessarily anticipate that supervisory support will have a pronounced effect during normal periods, given that JD-R theory stipulates that job resources are most effective when demands are high (Bakker et al., 2023; Bakker & Demerouti, 2017) and accountants develop resistance to job demands through socialization (Sweeney & Summers, 2002).

Collectively, prior research leads us to expect that supervisory support will have a more notable effect on accountants' end-of-day fatigue during busy season. Thus, we propose the following:

> **Hypothesis 2 (H2).** Greater supervisory support will be associated with greater decreases in end-of-day fatigue during busy season than during a normal work period.

2.4 | Downstream effects of fatigue on well-being and audit quality

While studying the antecedents to fatigue and the efficacy of coping mechanisms is important, it is equally critical to determine whether accountants' level of fatigue has consequences on their well-being and audit quality. Prior research finds that fatigue negatively affects well-being (e.g., stress, diet, sleep quality) and work behaviors (e.g., effort, performance) (Cropanzano et al., 2003; van der Linden, 2011), yet we know little about the effects of fatigue on accountants. Such knowledge is important, as regulators posit that workload-induced fatigue during busy season may be a potential root cause of PCAOB inspection findings (Hanson, 2013) and a key indicator of audit quality (IAASB, 2014; PCAOB, 2024). Thus, we examine two important downstream effects of fatigue: (1) sleep quality and next-day fatigue and (2) error identification.

It is well accepted that sleep is an integral recovery activity (Barnes, 2011; Newsom & Rehman, 2024). Sleep has restorative effects on the brain, and low-quality sleep can negatively impact cognition, attitudes, behaviors, and performance (Barnes, 2011; Walker, 2017). Specifically, lack of sleep is positively associated with increased unethical behavior and decreased rates of productivity (Barnes et al., 2011; Walker, 2017), and meta-analytic evidence suggests that sleep quality is linked to self-control (Guarana et al., 2021). However, despite the importance of sleep in restoring individuals to their baseline condition to start the next day, work often contributes to sleep problems. Barnes et al. (2011) notes that when individuals work more, they sleep less. Further, numerous job factors such as work schedules, workloads, and stress significantly contribute to poor sleep quality (Barnes & Watson, 2019). Given that busy season is characterized by long working hours, high workloads, and elevated stress, it stands to reason that these issues may be especially acute for accountants. This is troubling because sleep is the main mechanism through which individuals recover from fatigue, and sleep quality is a predictor of next-day effort (Schilpzand et al., 2018). Based on this discussion, we predict the following:

Hypothesis 3 (H3). Higher levels of end-of-day fatigue will reduce sleep quality and increase next-day fatigue.

Fatigue also predicts performance (Cropanzano et al., 2003). Numerous studies indicate that fatigue can impair performance across a variety of tasks (Helton et al., 2007; Marcora et al., 2009; Temple et al., 2000). This is because fatigue impedes attention (van der Linden & Eling, 2006), makes it difficult to focus on relevant information (Lorist & Faber, 2011) or engage in cognition (Lorist, 2008), and reduces motivation, effort, and information-processing capabilities (Hurley, 2023; Kanfer, 2011; van der Linden, 2011).

While psychology and organizational behavior literature generally find that fatigue affects job outcomes, accounting studies examining the direct effect of fatigue on audit quality are rare. Several studies infer the association by considering connections between auditor workloads (a proxy for fatigue) and audit quality (Christensen et al., 2021; Heo et al., 2021; Persellin et al., 2019), and several others examine connections between burnout and accountant turnover (e.g., Fogarty et al., 2000; Herda & Lavelle, 2012). More closely related to our current study, prior audit research finds that depleting tasks impair auditor judgment and performance (Hurley, 2019; Mullis & Hatfield, 2018) and that auditors' skeptical dispositions can lessen depletion during auditor negotiations (Bhaskar et al., 2023). Combining our expectation that microbreaks will reduce fatigue during busy season periods with prior research on the effect of fatigue on various work outcomes, we predict a mediating role of fatigue on the relationship between microbreaks and error detection, an on-the-job indicator of audit quality. Thus, we propose the following:

Hypothesis 4 (H4). Microbreaks will improve error identification by reducing fatigue.

3 | METHOD: FIELD STUDY

3.1 | Research design and procedures

To test H1 through H3, we collect data using a series of bi-daily logs that solicit information about public accountants' behaviors and perceptions during relatively normal and stressful periods of work (i.e., busy season).[6] We collected data in early November 2020 (typically, a normal work period) and in late January 2021 (typically, a busy season period), both of which occurred during the early stages of the COVID-19 pandemic when almost all public accountants were working from home.[7] Our research design follows prior psychology studies that examine an individual's behaviors over multiple days (Chawla et al., 2020; Kim et al., 2017, 2018).

On the Sunday evening preceding the first collection period, participants receive an email introducing the study and providing them with a unique ID to use throughout the study and a link to a Qualtrics survey, where they read an informed consent form. We inform participants that the bi-daily logs will run from Monday through Wednesday of the upcoming week, and that they will receive an email with links to the morning (evening) log at 7:00 a.m. (5:00 p.m.), which can be completed in under 1 (3) min. Finally, we disclose that full participation will result in one in every five participants winning a $50 electronic gift card at the end of each study period. The Sunday survey asks questions to assess participants' work environment, experience, and demographics. The weekday survey asks questions each morning to assess participants' previous night's sleep quality

[6]The Institutional Review Board approved each study involving human subjects, including the field study, experiments, and post hoc interviews. Field study and experiment data were collected using Qualtrics survey software.

[7]In our study, 97% (96%) of our participants indicate working from home during the normal (busy) period. Our results are robust even when excluding observations where individuals worked at a client site (8 of 255; 3%) or at their firm's office (37 of 255; 15%). Untabulated analysis indicates that work location is not significantly related to individuals' frequency of reported microbreaks.

and morning (i.e., next-day) fatigue and each evening to assess their daily microbreak activities, perceptions of supervisory support, and evening (i.e., end-of-day) fatigue.

We took several steps to reduce the likelihood that response bias or common method bias (CMB), where self-report measures are susceptible to common method variance, would impact our study. Ex ante, we adopt questions with different response formats and previously validated scales to measure constructs. We separate the measurement of the dependent and independent variables, include temporal separation by collecting at two time points each day, and assure participants that responses are anonymous and confidential (Podsakoff et al., 2003). Ex post, we employ Harman's single-factor test using exploratory factor analysis (Craighead et al., 2011; Podsakoff & Organ, 1986).[8] Collectively, our ex ante techniques limit the potential of introducing CMB, and our ex post analysis suggests that it is not problematic for our data.

3.2 | Participants

We contacted public accounting professionals (audit and tax) from US locations of Big 4, national, regional, and local firms within our network regarding interest in assisting with our study. We asked whether they would distribute a prepared recruitment request to other professionals within their firm and/or public accounting network at the staff and senior associate rank in their audit or tax practices. We focused our recruitment on staff and senior associates because these individuals are likely to be susceptible to the pressures and stress of busy season and more likely to receive daily supervisory support due to their rank. The recruitment request indicated that we wanted to examine public accountants' work environments and behaviors during different work phases (e.g., a standard workday, a busy season workday) and that brief daily logs would be sent over 4 days (Sunday through Wednesday) in each phase.

Fifty-three public accountants indicated a willingness to participate and provided an email address to receive study communications. Of these 53 accountants, 47 (89%) completed the study during the normal work period. Of these 47, 44 (94%) responded during busy season, yielding an overall response rate of 83%.[9] Participants' mean (median) professional experience is 32.7 (29.0) months, and 61% are female. By rank, 43% are associates, 50% are senior associates, and 7% are managers; 52% work for a Big 4 public accounting firm, and 66% work in audit.

3.3 | Variable measurement

The dependent variable of interest to test H1 and H2 is accountants' end-of-day fatigue. Following prior research examining workday exhaustion and fatigue (Chawla et al., 2020; Wright & Cropanzano, 1998), we measure fatigue using three items adapted from Wharton's (1993) scale for emotional exhaustion.[10] The measurement items for this scale and descriptive statistics are presented in Panel A of the Appendix. All items are rated on a 5-point scale ranging from *strongly disagree* (1) to *strongly agree* (5). This scale has acceptable reliability (Cronbach's alpha = 0.94). *FATIGUE* is the average of the participant's end-of-day response to the three items. To test H3, we also measure *NEXTDAY_FATIGUE*, which uses the same items as *FATIGUE* but is captured the morning of the following day, and *SLEEPQUALITY*, which represents

[8]Harman's single-factor test proposes that common method bias can be an issue if a single factor emerges from an unrotated factor analysis or if one general factor accounts for most of the variance among the measures. Neither is true for our data. The first factor explains only 20.7% of the total variance.

[9]We include in our analysis all participants who completed the Sunday survey and at least two sets of daily logs (morning and evening) during each period. Forty-two of 47 participants (89%) and 42 of 44 participants (91%) completed all 3 days of daily logs during the normal and busy work periods, respectively.

[10]Emotional exhaustion is a type of strain that results from workplace stressors (Cropanzano et al., 2003). It has emerged as a central variable for understanding the burnout process, which is a critical driver of performance and turnover in public accounting (Fogarty et al., 2000; Jones et al., 2010).

accountants' self-reported rating of the quality of their sleep during the prior night on a 5-point scale ranging from *very good* (1) to *very poor* (5), which we reverse code for interpretation.

Our independent variables include the work period, daily microbreak activities, and daily supervisory support. The work period is embedded in our study design because we collect data during early November (normal) and late January (busy), consistent with evidence from prior research that public accountants' busiest time is from January 1 through March 31 for auditors and through April 15 for tax accountants (López & Peters, 2012; Sweeney & Summers, 2002). *BUSY* is an indicator variable set to one for busy season observations, and zero otherwise.

We assess microbreak activities using a nine-item measure developed by Kim et al. (2017) which captures the frequency with which individuals take different types of microbreaks. The measure includes items representing four microbreak categories: relaxation (two items), nutrition (two items), social (three items), and cognitive (two items) activities. The measurement items and related descriptive statistics are presented in Panel B of the Appendix. As part of each evening log, we provide participants with the definition of microbreaks as "short, nonwork-related activities that you voluntarily take during your workday," and ask them to rate on a 5-point scale ranging from *never* (0 times) to *very frequently* (>5 times) how often they engaged in each microbreak activity that day. Similar to prior research (Kim et al., 2021), *MICROBREAKS* is the average of the participant's daily response to the nine items.

We assess supervisory support using a measure adapted from Eisenberger et al.'s (1986) Perceived Organizational Support (POS) scale. As part of each evening log, we ask participants to indicate on a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5) their agreement with four items describing their perception of the support provided by their direct supervisor during that workday. Panel C of the Appendix presents individual items on the POS scale and related descriptive statistics. This scale has acceptable reliability (Cronbach's alpha = 0.91). Similar to prior research (Bliese et al., 2017; Rhoades & Eisenberger, 2002), *SUPPORT* is the average of the participant's daily response to the four items.[11]

4 | RESULTS: FIELD STUDY

4.1 | Descriptive statistics

Table 1 presents variable names, variable definitions, and descriptive statistics for all factors we use in our regression and path models for the overall sample (Column 1), the normal work period (Column 2), and the busy season period (Column 3). Before proceeding to our hypothesis tests, we briefly discuss univariate comparisons between the normal and busy season periods. First, participants are significantly more fatigued during busy season than during the normal work period ($M_{\text{Busy}} = 3.28$, $M_{\text{Normal}} = 2.69$; $t_{253} = 4.39$, $p < 0.001$, two-tailed), and this higher fatigue is also reported the next morning ($M_{\text{Busy}} = 3.41$, $M_{\text{Normal}} = 2.49$; $t_{253} = 6.29$, $p < 0.001$, two-tailed). Second, both hours worked ($M_{\text{Busy}} = 3.93$, $M_{\text{Normal}} = 2.61$) and workload ($M_{\text{Busy}} = 3.70$, $M_{\text{Normal}} = 3.05$) are significantly greater during busy season ($t_{253} = 9.51$ and 5.94, respectively, both $p < 0.001$, two-tailed), validating our assumption that our study effectively captures normal and busy season periods.[12] Further, univariate tests also indicate that

[11]We also include participants' total time spent pursuing microbreaks (*BREAKTIME*) to control for lengthier breaks that would likely reduce end-of-day fatigue separately from the frequency of short microbreaks throughout the day. *BREAKTIME* is captured each evening and measures the approximate total amount of time spent pursuing breaks that day. Participants choose one of six options, ranging from 1 (*less than 15 minutes*) to 6 (*greater than 2 hours*).

[12]We measure hours worked (*HOURSWORKED*) with five choices: *7 hours or less* (1), *8 hours* (2), *9 hours* (3), *10 hours* (4), or *11 hours or more* (5). We capture daily workload (*WORKLOAD*) using an average of four self-report measures of job stressors and strain adapted from the Spector and Jex (1998) Workload Inventory Scale that represents the employee's perceived amount of work in terms of pace and volume. Each item is measured on a scale ranging from *strongly disagree* (1) to *strongly agree* (5). We measure both variables in the evening logs each day.

TABLE 1 Variable definitions and descriptive statistics for variables of interest.

Variable name	Variable description	Mean (WSD, BSD) (1) Overall	(2) Normal	(3) Busy
Dependent variables of interest				
FATIGUE	End-of-day fatigue measured as the average of three items from *strongly disagree* (1) to *strongly agree* (5); see the Appendix, Panel A	2.99 (1.14, 0.75)	2.69 (1.00, 0.83)	3.28*** (1.19, 1.05)
SLEEPQUALITY	Quality of sleep measured each morning as choices from *very good* (1) to *very poor* (5) (reverse coded)	3.44 (0.85, 0.49)	3.43 (0.91, 0.62)	3.45 (0.79, 0.57)
NEXTDAY_FATIGUE	Next morning fatigue measured as the average of three items from *strongly disagree* (1) to *strongly agree* (5); see the Appendix, Panel A	2.95 (1.26, 0.75)	2.49 (0.93, 0.76)	3.41*** (1.38, 1.11)
Independent variables of interest				
BUSY	Indicator variable, where one indicates the participant is in busy season, and zero otherwise	0.50 (0.50, 0.50)		
HOURSWORKED	Number of hours worked each day measured as five choices from *7 hours or less* (1) to *11 hours or more* (5)	3.27 (1.29, 0.80)	2.61 (1.00, 0.84)	3.93*** (1.21, 1.07)
WORKLOAD	Daily workload measured as the average of four items from *strongly disagree* (1) to *strongly agree* (5); see Footnote 12	3.37 (0.93, 0.63)	3.05 (0.92, 0.80)	3.70*** (0.82, 0.71)
MICROBREAKS	Microbreak activities pursued each day measured as the average of nine items, from *never* (0 times) to *very frequently* (>5 times); see the Appendix, Panel B	2.38 (0.57, 0.47)	2.49 (0.55, 0.49)	2.28*** (0.58, 0.54)
SUPPORT	Extent to which one feels supported by a direct supervisor each day measured as the average of four items from *strongly disagree* (1) to *strongly agree* (5); see the Appendix, Panel C	3.61 (0.89, 0.61)	3.51 (0.92, 0.73)	3.72** (0.85, 0.73)
Control variables				
BREAKTIME	Amount of time spent pursuing microbreaks each day measured as choices from *less than 15 minutes* (1) to *greater than 2 hours* (6)	2.90 (1.17, 0.83)	3.04 (1.19, 0.93)	2.76* (1.13, 0.98)
Number of observations		255	128	127

Note: All variables are within-person variables, except *BUSY*. This table presents descriptive statistics (mean, within-subject standard deviation (WSD), between-subject standard deviation (BSD)) for all variables used in the mixed regression and path models. Column 1 presents the overall sample mean. Columns 2 and 3 present means for the normal work period and the busy season period, respectively. *, **, and *** indicate significance at $p < 0.10$, 0.05, and 0.01, respectively, of tests of differences between normal and busy, based on two-tailed *t*-tests.

participants pursue microbreaks less frequently during busy season than during a normal period ($M_{Busy} = 2.28$, $M_{Normal} = 2.49$; $t_{253} = 2.89$, $p = 0.004$, two-tailed).[13] Finally, Table 1 shows that the mean of *SUPPORT* differs significantly between busy season versus normal ($M_{Busy} = 3.72$, $M_{Normal} = 3.51$; $t_{253} = 1.97$, $p = 0.049$, two-tailed), indicating subordinates perceive higher supervisory support during busy season.

4.2 | Results for microbreaks and supervisory support on fatigue (H1 and H2)

To test H1 and H2, we run a mixed-effects linear regression model that controls for repeated observations at both the participant and weekday levels.[14]

$$\begin{aligned} FATIGUE = {} & \beta_0 + \beta_1 BUSY\,(+) + \beta_2 MICROBREAKS + \beta_3 SUPPORT \\ & + \beta_4 BUSY \times MICROBREAKS\,(\text{H1};-) + \beta_5 BUSY \times SUPPORT\,(\text{H2};-) \\ & + \beta_6 MICROBREAKS \times SUPPORT \\ & + \beta_7 BUSY \times MICROBREAKS \times SUPPORT + \beta_8 BREAKTIME + \varepsilon. \end{aligned} \tag{1}$$

Consistent with our expectations, correlations (not tabled) indicate that *FATIGUE* is positively correlated with *HOURSWORKED* ($p < 0.01$) and *WORKLOAD* ($p < 0.01$) and negatively correlated with *SLEEPQUALITY* ($p < 0.01$). Table 2 presents the results of our regression analysis. We confirm our expectation that accountants are significantly more fatigued during busy season, as *BUSY* is positive and significant ($p < 0.001$, one-tailed).

We test H1, regarding the moderating effect of microbreaks on the work period, using the coefficient of the interaction term *BUSY*×*MICROBREAKS*. Consistent with H1, this interaction term is negative and significant ($p = 0.001$, one-tailed), indicating that microbreaks are associated with lower levels of end-of-day fatigue during busy season than during the rest of the year. Figure 1A illustrates the specific pattern of moderation by graphing the marginal effects at one standard deviation below/above the means of microbreaks for normal versus busy. We compare point estimates derived from the marginal effects using two-tailed contrasts (not tabled) to further test H1. Specifically, the impact of more microbreaks has a greater effect on lowering end-of-day fatigue during busy season (*c* vs. *d*; $z = -2.96$, $p = 0.003$) compared to the normal work period (*a* vs. *b*; $z = 0.78$, $p = 0.438$), consistent with our prediction. During normal work periods, accountants' end-of-day fatigue is relatively low; thus, microbreaks do not appear to be associated with significantly reduced end-of-day fatigue.

We test H2, regarding the moderating effect of supervisory support on the work period, using the coefficient of the interaction term *BUSY*×*SUPPORT*. Consistent with H2, the interaction term is negative and significant ($p < 0.001$, one-tailed), indicating that the provision of supervisory support is associated with lower levels of end-of-day fatigue during busy season than during normal periods. Figure 1B shows the pattern of results by graphing the marginal effects at one standard deviation below/above the means of supervisory support for normal

[13]To address concerns that supervisor behavior or individual accountant characteristics influence the number of microbreaks taken, we conduct two untabulated mixed-effects linear regression models with *MICROBREAKS* as the dependent variable. The first (second) model examines the effect of supervisory support (work engagement). We measure work engagement as the mean of five separate items from the Utrecht Work Engagement Scale (Schaufeli et al., 2006). We find that supervisory support, work engagement, and their interactions with busy season are all nonsignificant in influencing microbreak use.

[14]The survey and/or logs included a number of questions about the participant's work environment (e.g., team size, type of work, work location) and personal characteristics (e.g., gender, age, experience, work engagement) as potential control variables, but are not used in the models due to a lack of explanatory power as covariates. While our sample size precludes running separate regressions for type of work (i.e., audit or tax) or rank, our reported results are robust to controlling for these variables and for gender, both as main effects and interactions with microbreaks and/or supervisory support.

TABLE 2 Results of model: Factors associated with end-of-day fatigue.

Variables	Hypothesis	Exp. sign	Coeff. (*z*-statistic)
BUSY		+	0.365***
			(3.54)
MICROBREAKS			0.073
			(0.78)
SUPPORT			0.037
			(0.52)
BUSY×*MICROBREAKS*	H1	−	−0.350***
			(−3.28)
BUSY×*SUPPORT*	H2	−	−0.372***
			(−3.59)
MICROBREAKS×*SUPPORT*			−0.155**
			(−1.96)
BUSY×*MICROBREAKS*×*SUPPORT*		?	0.168
			(1.37)
BREAKTIME		−	−0.210***
			(−3.17)
INTERCEPT			−0.225**
			(−2.12)
Number of observations			255
Pseudo R^2			0.218

Note: This table presents the results of a mixed-effects linear regression with end-of-day fatigue (*FATIGUE*) as the dependent variable. See Table 1 for variable definitions. We mean-center and standardize all variables. All break-related variables are deflated by hours worked before mean centering and standardizing. We use by-participant and by-day random intercepts to control for repeated measures. Correlations between independent variables are all below 0.60. The highest variance inflation factor (VIF) for any individual variable is 2.34, and the average VIF for the model is 1.87, indicating that multicollinearity should not be problematic.
*, **, and *** indicate significance at $p < 0.10$, 0.05, and 0.01, respectively, with one-tailed *p*-values for tests with directional predictions.

versus busy and performing two-tailed contrasts comparing the point estimates (not tabled) to further test H2. Specifically, higher supervisory support has a greater effect on lowering end-of-day fatigue during busy season (*c* vs. *d*; $z = -3.80$, $p < 0.001$) compared to the normal work period (*a* vs. *b*; $z = 0.52$, $p = 0.606$). Similar to our testing in H1, because end-of-day fatigue is relatively low in the normal period, higher levels of supervisory support do not appear to be associated with significantly reduced end-of-day fatigue.[15]

4.3 | Further testing of JD-R theory

We investigate two possible coping mechanisms—a job crafting, self-regulated strategy (i.e., microbreaks) and an externally provided driven job resource (i.e., supervisory support)—that may reduce fatigue, particularly during busy season. However, it is an open question whether these two aspects of the JD-R model function as substitutes or complements. Some

[15]We remove the 18 observations obtained from managers to ensure results are not driven by these observations. In the primary model, the interaction of *BUSY*×*SUPPORT* loses significance, but the three-way interaction (*BUSY*×*MICROBREAKS*×*SUPPORT*) becomes highly significant. We compute marginal effects to examine this interaction and find that results are quantitatively similar to our findings from our full sample and do not change our inferences. Similarly, the inferences from our path models in Figure 3 are unchanged when excluding these observations.

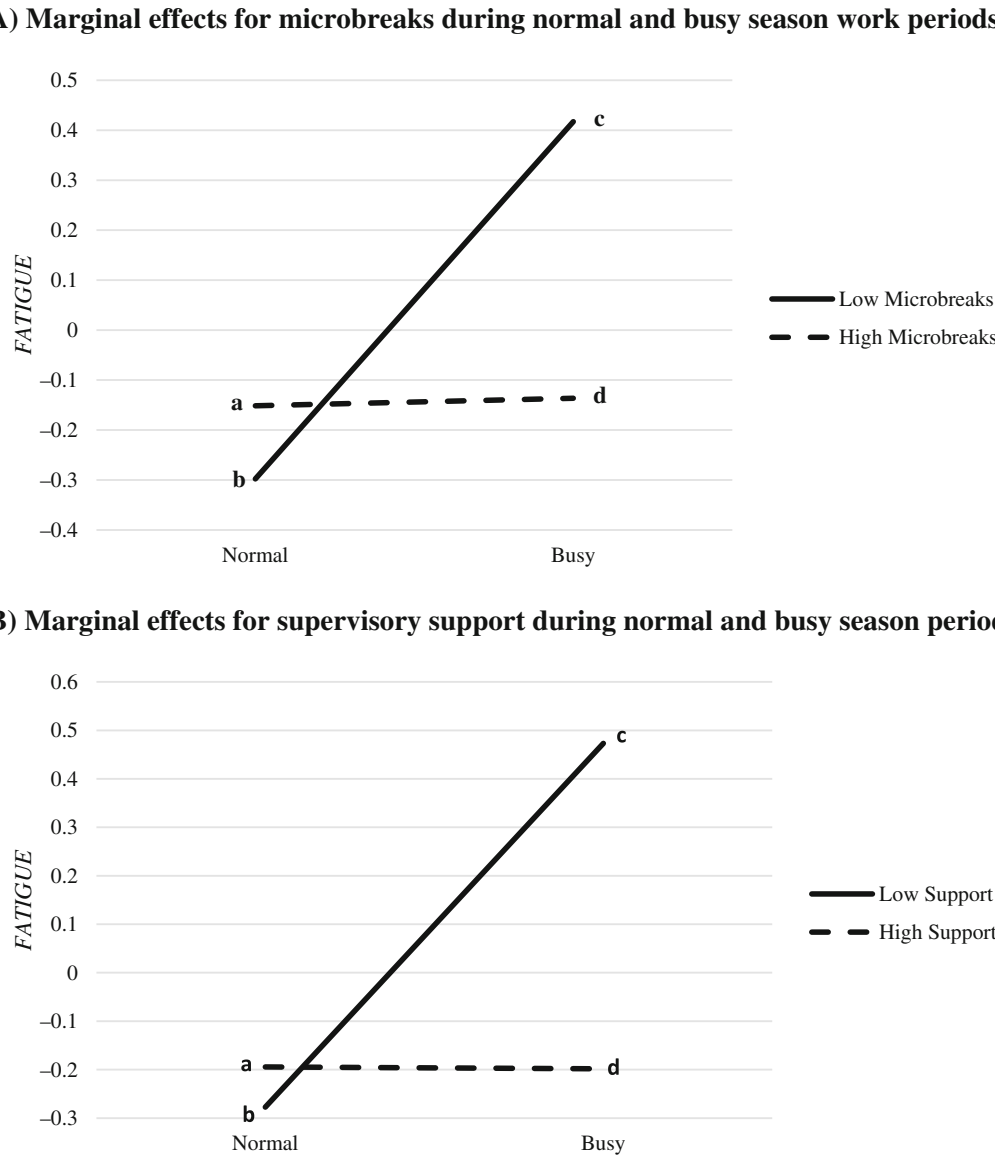


FIGURE 1 Marginal effects for the two-way interactions between the work periods and coping mechanisms. (A) The interaction of the work period (normal/busy) and microbreaks on end-of-day fatigue using marginal effects at 0/1 and ±1 standard deviation, respectively. (B) The interaction of the work period (normal/busy) and supervisory support on end-of-day fatigue using marginal effects at 0/1 and ±1 standard deviation, respectively.

research suggests that the provision of supervisory support changes subordinates' perceptions of workload and job demands by allowing them to feel more comfortable implementing personal strategies to cope with stress (Bakker et al., 2005; Bakker & Demerouti, 2017). Under this view, the microbreak efficacy would be enhanced when an accountant feels supported by their supervisor, further reducing fatigue. Alternatively, accountants may trade off these mechanisms against each other to achieve recovery. For example, an accountant perceiving less (more) supervisory support may adjust their job crafting by increasing (reducing) their use of microbreaks to compensate.

To explore this question, we examine the combined effect of both factors on end-of-day fatigue during busy season. In Table 2, the coefficient of the interaction term *MICROBREAKS*×*SUPPORT* is negative and significant ($z = -1.96$, $p = 0.050$, two-tailed), suggesting that the combination of increased microbreaks and supervisory support is associated with reduced end-of-day fatigue in general. However, while the coefficient of the interaction term *BUSY*×*MICROBREAKS*×*SUPPORT* is not significant, further analysis suggests that the interactive effect of microbreaks and support is driven by the effects of end-of-day fatigue during busy season. Specifically, we compute the marginal effects at one standard deviation below/above the means of microbreaks and supervisory support for normal versus busy, present the pattern of results in Figure 2, and compare the point estimates (not tabled) using two-tailed contrasts. We find that accountants with lower levels of microbreaks and lower supervisory support have the highest level of end-of-day fatigue during busy season. Accountants who incorporate more microbreaks have significantly lower end-of-day fatigue (*a* vs. *b*, $z = -2.00$, $p = 0.046$), as do those with higher supervisory support (*a* vs. *c*, $z = -3.44$, $p = 0.001$). Those who take more microbreaks and have higher supervisory support have the lowest end-of-day fatigue during busy season (*a* vs. *d*, $z = -4.83$, $p < 0.001$); this effect is significantly different than those with higher support only (*c* vs. *d*, $z = -2.17$, $p = 0.030$) and those with higher microbreaks only (*b* vs. *d*, $z = -2.09$, $p = 0.036$). Taken together, we interpret our results to mean that accountants who pursue microbreaks or feel supported by their supervisor will experience lower end-of-day fatigue, and this benefit will be enhanced when microbreaks and support co-occur.

We also explore how different job demands (e.g., long working hours and high workload) influence fatigue and how microbreaks and supervisory support can moderate these relationships. This analysis can shed light on the boundary conditions of JD-R theory and the generalizability of our results, as job demands do not typically occur in isolation but have been exclusively tested as such in prior literature (Bakker & Demerouti, 2017). To explore the relationships between these variables, we specify the path model presented in Figure 3 to investigate the role of *HOURSWORKED* and *WORKLOAD* as mediators that help to explain the relationship between *BUSY* and *FATIGUE*. In this model, we predict *BUSY* increases job demands (Link 1) in terms of a higher *WORKLOAD* or more *HOURSWORKED*, which increases *FATIGUE* (Link 2). We predict the relationship between job demands and *FATIGUE* is

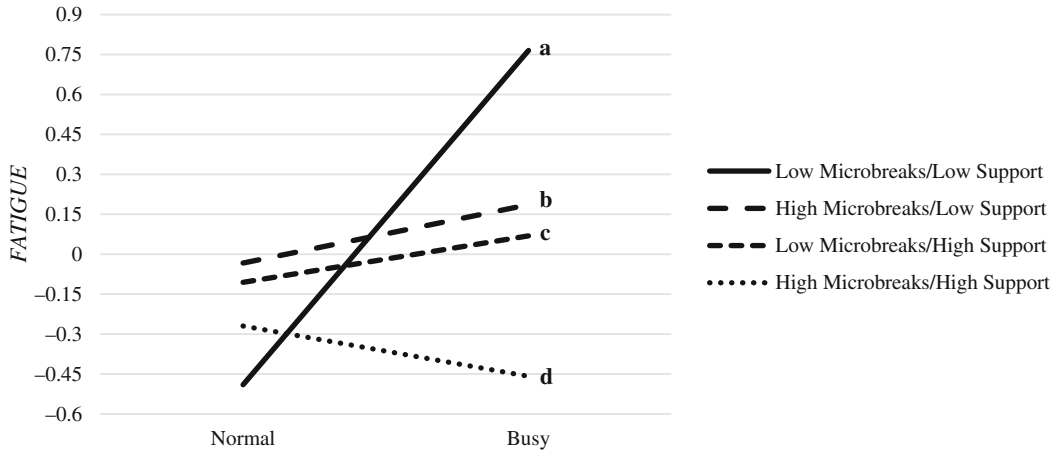
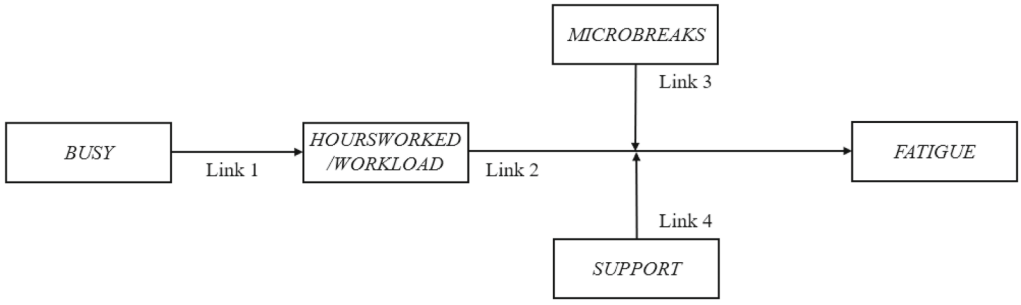


FIGURE 2 Marginal effects for the three-way interaction between work period, microbreaks, and supervisory support. This figure illustrates the interaction of the work period (normal vs. busy), microbreaks, and supervisory support on end-of-day fatigue using marginal effects at 0/1 for normal and busy and ±1 standard deviation for microbreaks and supervisory support.

moderated by *MICROBREAKS* (Link 3) and *SUPPORT* (Link 4), such that either resource helps to buffer the effects of job demands on fatigue. Consistent with our expectations, we find that *BUSY* increases both *HOURSWORKED* ($z = 9.29$, $p < 0.001$) and *WORKLOAD* ($z = 5.91$, $p < 0.001$), and each significantly increases *FATIGUE* ($z = 6.83$, $p < 0.001$ and $z = 10.08$, $p < 0.001$, respectively). We find that *MICROBREAKS* effectively moderate the influence of *HOURSWORKED* ($z = -2.22$, $p = 0.013$) and *WORKLOAD* ($z = -2.54$, $p = 0.006$) on *FATIGUE*, while *SUPPORT* only moderates the influence of *HOURSWORKED* ($z = -1.86$, $p = 0.032$). These results suggest that microbreaks are associated with reduced end-of-day fatigue in settings characterized by high workloads, long hours, or both. By contrast, supervisory support is associated with reduced end-of-day fatigue in settings characterized by long hours or high workloads with long hours. These findings indicate that our results may generalize to other contexts where job demands occur independently (e.g., normal hours and a heavy workload).

4.4 | Effects of end-of-day fatigue on sleep quality and next-day fatigue (H3)

We next test H3 by examining how accountants' end-of-day fatigue during busy season impacts their next-day fatigue and how their sleep quality mediates this relationship. To test H3, we use the subset of our data collected during busy season ($n = 86$) and conduct a separate mediation analysis that models a direct relationship between $FATIGUE_{t-1}$ and *NEXTDAY_FATIGUE*, with *SLEEPQUALITY* mediating this relationship. We conduct our analysis using seemingly unrelated regressions and cluster our analysis by participant to control for repeated measures. We employ the bias-corrected bootstrapping procedure with 1,000 iterations (Preacher & Hayes, 2008).



	Model	
	HOURSWORKED	***WORKLOAD***
Link 1	$b = 1.026$, $z = 9.29$, $p = 0.000$	$b = 0.700$, $z = 5.91$, $p = 0.000$
Link 2	$b = 0.405$, $z = 6.83$, $p = 0.000$	$b = 0.589$, $z = 10.08$, $p = 0.000$
Link 3	$b = -0.118$, $z = -2.22$, $p = 0.013$	$b = -0.125$, $z = -2.54$, $p = 0.006$
Link 4	$b = -0.116$, $z = -1.86$, $p = 0.032$	$b = 0.002$, $z = 0.04$, $p = 0.967$

FIGURE 3 Path model examining the relationships between job demands, coping mechanisms, and end-of-day fatigue. This figure presents our path analysis results for examining how busy season influences specific job demands, how those job demands influence end-of-day fatigue, and how microbreaks and supervisory support moderate the latter relationship ($n = 255$). See Table 1 for all variable definitions. We conduct our analysis using seemingly unrelated regressions via the sureg command in Stata 16.1 and cluster our analysis by participant to control for repeated measures. We employ the bias-corrected bootstrapping procedure with 1,000 iterations (Preacher & Hayes, 2008). All *p*-values are reported on a one-tailed basis due to directional predictions, except for Link 4 under *WORKLOAD*, which is directionally inconsistent with theoretical predictions.

Figure 4 presents the results of this analysis. Consistent with H3, $FATIGUE_{t-1}$ significantly increases $NEXTDAY\_FATIGUE$ ($z = 6.34$, $p < 0.001$), and this relationship is mediated by $SLEEPQUALITY$ ($\beta = 0.101$, 95% CI = [0.024, 0.178]).[16] These results imply that end-of-day fatigue increases next-day fatigue both directly as well as indirectly through reductions in sleep quality during busy season. Thus, it appears that fatigue operates cumulatively, increasing throughout the work week if it is not properly managed daily. As a current Big 4 audit partner explained, "When I am stressed, there is bad sleep, and then it compounds everything. . . . Anybody says it doesn't, they are not being honest, or they are not self-aware."

5 | METHOD: EXPERIMENTS

Next, we seek to test H4 with a between-subjects randomized controlled experiment, which can establish causality between microbreaks, fatigue, and audit quality. Further, it reduces alternative explanations for our field study results (e.g., endogeneity and CMB).[17]

5.1 | Participants

Our first sample of participants is undergraduate and graduate accounting students at seven US-based universities who completed at least one accounting internship and have accepted a post-graduation accounting job offer. These inclusion criteria are meant to ensure that only accounting students who approximate staff-level public accountants are included in our

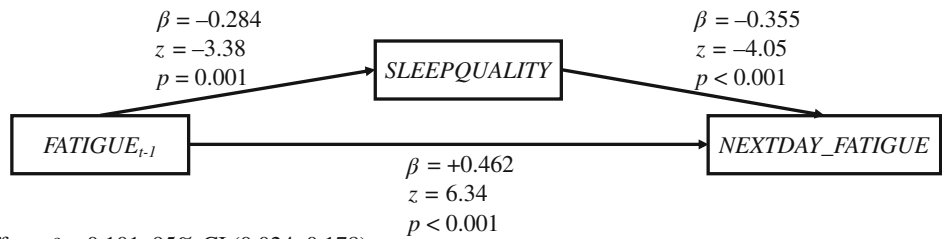


FIGURE 4 Path model examining the effects of end-of-day fatigue on sleep quality and next-day fatigue (H3). This figure presents our results for examining how accountants' end-of-day fatigue relates to their next-day fatigue and how their sleep quality mediates this relationship. We conduct a mediation analysis for busy season observations ($n = 86$) that models a direct relationship between $FATIGUE_{i-1}$ and $NEXTDAY\_FATIGUE$, with $SLEEPQUALITY$ mediating this relationship. See Table 1 for all variable definitions. We conduct our analysis using seemingly unrelated regressions via the sureg command in Stata 16.1 and cluster our analysis by participant to control for repeated measures. We employ the bias-corrected bootstrapping procedure with 1,000 iterations (Preacher & Hayes, 2008). All p-values are reported on a one-tailed basis based on directional predictions.

[16]For robustness, we conduct an additional mediation analysis that adds $SLEEPTIME$ as a second mediator to our model in Figure 4. $SLEEPTIME$ captures accountants' self-reported hours slept the prior night on a 5-point scale ranging from *less than 6 hours* (1) to *12 or more hours* (5). We find that the $SLEEPTIME$ mediation is nonsignificant ($p = 0.402$), and our original direct effect ($p < 0.001$) and $SLEEPQUALITY$ mediation ($p = 0.014$) both retain their significance. This result indicates that it is specifically accountants' sleep quality, rather than hours slept, that is restorative for next-day fatigue.

[17]For completeness, and to match our field study design, we designed and conducted a 2 × 2 between-subjects experiment manipulating microbreaks and supervisory support. Prior literature clearly indicates that supervisor support influences fatigue, burnout, and performance (Bakker et al., 2005; A. Lee et al., 2019). However, our manipulation of supervisory support had weak external validity, as it is difficult to operationalize felt support in an experiment using a fictitious supervisor whom the participants have not met. As a result, we collapsed this variable to focus on examining whether there are causal links between microbreaks, fatigue, and audit quality.

analyses. Instructors administer the experiment in a classroom setting, where participants read an informed consent document and agree to participate in the experiment in exchange for course credit. Our second sample of participants are MTurk workers aged 18–50 who earned at least a high school diploma and completed at least 100 approved human intelligence tasks with an approval rate of at least 90%. MTurk workers are compensated $2.00 base pay plus a $2.00 bonus if they correctly answer attention check questions during the experiment.[18] We administered both studies between March and June 2023 using Qualtrics.

5.2 | Design and procedures

Upon agreeing to participate, participants are randomly assigned to experimental conditions. Our first task is designed to induce a baseline level of cognitive fatigue in all participants. We use a writing task from prior psychology (Schmeichel & Vohs, 2009; Yam et al., 2014) and accounting studies (Bhaskar et al., 2023). The writing task asks participants to spend 6 min typing a short essay about a trip they took recently. However, participants are instructed not to use the letters A or N in their typed response. Inhibiting the use of A and N is cognitively effortful due to their frequency of use and therefore leads to cognitive fatigue.

Next, participants complete our microbreak (*MICROBREAKS*) manipulation. Participants either view (present) or do not view (absent) a 1-min relaxing video of a nature walk accompanied by relaxing music. We chose a relaxation break because it was the most commonly reported break among our field study participants (see the Supplementary Appendix).[19] We chose a video of a nature walk based on literature indicating that "green" (i.e., nature-based) microbreaks are restorative (K. E. Lee et al., 2015; K. E. Lee et al., 2017). After the microbreak manipulation, participants read an email from their "supervisor" about what they will be working on today. They are then asked about their level of fatigue. We measure *FATIGUE* by asking, "How fatigued do you currently feel?" and allowing responses on a 10-point scale from 1 (*not at all*) to 10 (*extremely*). We collect our measure of fatigue (our mediating variable) before our measure of audit quality to avoid contaminating the mediating variable (Asay et al., 2022). Based on the goals of our experiment, this ordering is more appropriate (Hurley, 2023).

Participants then proceed to the task, where they assume the role of a staff auditor and are asked to complete testing of their client's check register by matching information from invoices (Mendoza & Winn, 2022). Specifically, participants receive 30 check register entries in Qualtrics, with links to the invoices to use in their testing. To complete the task, participants match the company name, invoice date, number, and amount to the information in the check register. If participants encounter an error during their testing, they are instructed to place a checkmark below the relevant category for that item (e.g., invoice amount). If participants do not encounter any errors for that invoice, they check a box labeled "No error found." As in Mendoza and Winn (2022), we seed seven errors within the 30 invoices and use the number of seeded errors detected (*ERRORSDETECTED*) as our dependent variable to proxy for audit quality. Finally, participants complete a post-experimental questionnaire that includes a manipulation check and demographic questions. Upon completion, participants in the microbreaks absent condition view the microbreak video.

[18]Since we use a basic entry-level task that requires no advanced accounting knowledge, MTurk workers are a reasonable proxy for staff-level auditors (Farrell et al., 2017; Leiby et al., 2021). We conduct our experiment with a second sample (MTurk workers) for two reasons. First, compensating participants incentivizes them to remain attentive throughout the case, and having participants complete the study in isolation helps to avoid any potential pressures to finish that may have occurred in the classroom setting. Second, using a more general population also allows us to examine the robustness of our results and whether the results are specific to accounting students who opt into the profession or generalize more broadly.

[19]The Supplementary Appendix is available in the Supporting Information.

6 | RESULTS: EXPERIMENTS

6.1 | Descriptive statistics and manipulation checks

Beginning with our 110 qualified students and 124 qualified MTurk workers, we first assess whether participants complied with the fatiguing writing task instructions. The rationale is that our manipulation of microbreaks requires that participants have incurred some level of fatigue before the break; otherwise, there is no job strain requiring mitigation. We require participants to have worked on the writing task for at least 2 min to allow them to accumulate fatigue. Given that fatiguing manipulations are often between 5 and 15 min (Hurley, 2023), and JD-R theory indicates that job resources are more effective when job demands are high (Bakker et al., 2023), this is a conservative estimate. This is especially true considering the microbreak itself is 1 min in duration.[20] As a result of these exclusions, our results are based on sample sizes of 93 students and 86 MTurk workers.

TABLE 3 Experiment descriptive statistics by sample.

Panel A: Descriptive statistics for fatigue (*FATIGUE*)		
MICROBREAKS	**Student sample**	**MTurk sample**
Absent	6.00	5.75
	(2.39)	(2.99)
	[50]	[40]
Present	5.33	4.48
	(2.04)	(2.61)
	[43]	[46]
Marginal means	5.69	5.07
	(2.25)	(2.85)
	[93]	[86]
Panel B: Descriptive statistics for error detection (*ERRORSDETECTED*)		
MICROBREAKS	**Student sample**	**MTurk sample**
Absent	4.56	3.30
	(1.97)	(2.37)
	[50]	[40]
Present	5.05	3.80
	(1.56)	(2.28)
	[43]	[46]
Marginal means	4.79	3.57
	(1.80)	(2.32)
	[93]	[86]

Note: Panel A presents descriptive statistics by experimental condition for our dependent variable *FATIGUE* for the student sample and MTurk sample. Panel B presents descriptive statistics by experimental condition for our dependent variable *ERRORSDETECTED* for the student sample and MTurk sample. Means are presented first, with standard deviations in parentheses and sample size in brackets. Variable definitions: *MICROBREAKS*, manipulated as Absent = 0 (the participant did not watch the 1-min microbreak video before completing the audit task) and Present = 1 (the participant did watch the 1-min microbreak video before completing the audit task); *FATIGUE*, Measured as "How fatigued do you currently feel?" with responses on a 10-point scale from 1 (*not at all*) to 10 (*extremely*); *ERRORSDETECTED*, measured as the number of seeded errors (0–7) identified during the task.

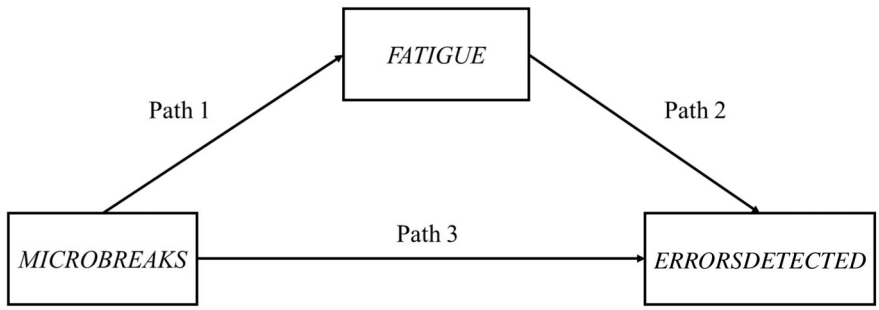
[20]We conduct sensitivity tests based upon samples using 1-, 2-, 3-, 4-, and 5-min cutoff criteria in the writing task to ensure that our results are robust to alternative levels of fatigue. When considering student and MTurk populations, the only sample that did not display a significant reduction in fatigue from microbreaks was the 1-min cutoff in the student population. This is expected, as 1 min of task performance likely does not cause a significant amount of fatigue to mitigate. We generally find that our results remain unchanged or strengthen with more liberal cutoffs (i.e., 3, 4, and 5 min on the writing task), supporting our rationale that longer task performance increases fatigue and provides comfort that our results are not driven simply by using the 2-min cutoff.

6.2 | Testing efficacy of microbreaks on fatigue

We next examine the efficacy of our intervention. Within both samples (Table 3, Panel A), we find that the *MICROBREAKS* manipulation reduced participants' fatigue. In our student sample, participants in the Absent (i.e., no break) condition report significantly higher fatigue than those in the Present (i.e., break) condition ($M_{\text{Absent}} = 6.00$ vs. $M_{\text{Present}} = 5.33$, $t_{91} = 1.45$, one-tailed $p = 0.075$). Our MTurk sample yields similar but stronger results ($M_{\text{Absent}} = 5.75$ vs. $M_{\text{Present}} = 4.48$, $t_{84} = 2.11$, one-tailed $p = 0.019$).

6.3 | Effects of fatigue on error detection (H4)

To test H4, we examine the impact of microbreaks on error detection through individuals' fatigue using the path model presented in Figure 5. While we are primarily interested in the effect of fatigue on error detection, we test the full model such that we predict that *MICROBREAKS* will reduce *FATIGUE* (Path 1), which will increase the *ERRORSDETECTED* (Path 2) by the participant. We



Path	Student sample	MTurk sample
Path 1 (–) (*BREAK→FATIGUE*)	$b = -0.674$ $z = -1.50$ $p = 0.067$	$b = -1.254$ $z = -2.00$ $p = 0.023$
Path 2 (–) (*FATIGUE→ERRORSDETECTED*)	$b = -0.225$ $z = -3.26$ $p < 0.001$	$b = -0.175$ $z = -2.01$ $p = 0.022$
Path 3 (+) (*MICROBREAKS→ERRORSDETECTED*)	$b = 0.335$ $z = 0.99$ $p = 0.161$	$b = 0.081$ $z = 0.16$ $p = 0.438$
Indirect (+) (*MICROBREAKS→FATIGUE→ERRORSDETECTED*)	$b = 0.152$ $z = 1.33$ $p = 0.092$	$b = 0.219$ $z = 1.23$ $p = 0.109$

FIGURE 5 Experiment path model examining causal effects on fatigue and error detection by sample. This figure presents our path analysis results for examining how microbreaks influence error detection on an accounting task and how fatigue mediates this relationship. We conduct a mediation analysis ($n_{\text{Student}} = 93$; $n_{\text{MTurk}} = 86$) that models a direct relationship between *MICROBREAKS* and *ERRORSDETECTED*, with *FATIGUE* mediating these relationships. We conduct our analysis using seemingly unrelated regressions via the sureg command in Stata 16.1. We employ the bias-corrected bootstrapping procedure with 1,000 iterations (Preacher & Hayes, 2008). All *p*-values are reported on a one-tailed basis due to directional predictions, except in instances when results are inconsistent with directional predictions. Variable definitions: *MICROBREAKS*, manipulated as Absent = 0 (the participant did not watch the 1-min microbreak video before completing the audit task) and Present = 1 (the participant did watch the 1-min microbreak video before completing the audit task); *FATIGUE*, measured as "How fatigued do you currently feel?" with responses on a 10-point scale from 1 (*not at all*) to 10 (*extremely*); *ERRORSDETECTED*, measured as the number of seeded errors (0 to 7) detected during the task.

also include a direct effect of *MICROBREAKS* on *ERRORSDETECTED* (Path 3) and an indirect effect through *FATIGUE* (Indirect). Table 3 presents descriptive statistics by condition for both samples. We find support for our predicted path in both samples, albeit in some cases results are weaker or nonsignificant between models. In our student sample, *MICROBREAKS* reduce *FATIGUE* (Path 1: $z = -1.50$, $p = 0.067$), and higher levels of *FATIGUE* reduce *ERRORSDETECTED* (Path 2: $z = -3.26$, $p < 0.001$). The indirect effect of this path is positive and marginally significant (Indirect 1: $z = 1.33$, $p = 0.092$), indicating that a microbreak increases the number of errors found in the invoice task by decreasing fatigue. In our MTurk sample, we find similar results; *MICROBREAKS* reduce *FATIGUE* (Path 1: $z = -2.00$, $p = 0.023$), and higher levels of *FATIGUE* reduce *ERRORSDETECTED* (Path 2: $z = -2.01$, $p = 0.022$). However, while the indirect effect is in the predicted direction, it does not reach significance (Indirect 1: $z = 1.23$, $p = 0.109$).

7 | CONCLUSIONS

Overcoming the negative outcomes associated with fatigue (e.g., burnout, decreased audit quality) remains a challenge for public accountants and their firms, who continue implementing strategies to try to reduce these effects. Busy season in particular threatens accountants' ability to make sound judgments and decisions (Hurley, 2017), which jeopardizes audit quality and raises concerns of regulators (e.g., PCAOB, 2024). Our interviews highlight these concerns. As one Big 4 partner explained, "We always talk about [how] the quality of a decision that you can make at 2 o'clock in the afternoon on a Thursday in August is very different than the quality of a decision you can make at 2 o'clock in the morning on a Sunday in February, before a deadline."

Using both a field study of accountants' lived daily experiences captured via bi-daily logs and an experiment, we investigate whether microbreaks and supervisory support are coping mechanisms that can help accountants mitigate fatigue. We also examine the downstream effects of fatigue on next-day fatigue and error detection. We find that accountants who pursue microbreaks more frequently and/or receive a higher level of supervisory support during their busy season workday end the day less fatigued and report the lowest levels of end-of-day fatigue when both mechanisms are present at high levels. Further, when these coping mechanisms reduce end-of-day fatigue during busy season, individuals experience improved sleep quality and reduced next-day fatigue.

Our experimental results across two samples provide strong causal evidence linking microbreaks, fatigue, and audit quality, which extends prior research on this important issue (Heo et al., 2021; Hurley, 2019). Specifically, we find that a 1-min microbreak reduces fatigue, which ultimately increases error detection and improves audit quality. When presented with the theoretical and practical contributions from our studies, which we present in Table 4, all six of our interviewees indicated they would support incorporating microbreaks into their team culture and firm training. As succinctly stated by a former Big 4 office managing partner, "The short answer is absolutely, I think it's [microbreaks] worthwhile and training people on how to do it, how this profession can take a toll, and how to break that up and reduce stress in various ways, I believe these [microbreaks] would be effective."

Our study also provides several contributions related to the JD-R model and theory. First, we address calls for research on the interactive effects of job demands (Bakker & Demerouti, 2017; Cham et al., 2021) by examining the JD-R model in two opposing work periods (normal and busy season) and in the absence and presence of concurrent job demands (long hours and/or high workload). We offer evidence that job demands must be sufficiently high for job crafting (microbreaks) and job resources (supervisory support) to have noticeable benefits on fatigue. For example, we find that microbreaks reduce end-of-day fatigue during

TABLE 4 Summary of key findings, practical implications, and future research.

Topic	Key findings	Key takeaways	
		Practical implications	**Future research**
Effect of microbreaks and supervisory support on fatigue	• Microbreaks and supervisory support are effective coping mechanisms for accountants during busy season (H1 and H2) • Accountants who pursue microbreaks or feel supported by their supervisor will experience lower end-of-day fatigue, and this benefit will be enhanced when microbreaks and support co-occur during busy season • Accountants pursue microbreaks less frequently during busy season • Supervisors increase their support during busy season, suggesting some may recognize the increased job demands and the benefits of increasing support	Firm and team leaders should • actively encourage team members to take short breaks throughout the day during busy season; • actively provide support to team members during busy season; • continue to work towards a firm culture and social norms that emphasize employee well-being and a culture of care; and • consider incorporating modules in their training programs that focus on developing tacit skills to improve supervisory support and explain the on-the-job benefits of this support Regulators should • continue to focus on hours worked and workloads as key measurable job demands that function as audit quality indicators (AQIs)	Future research should • use controlled experiments to examine how different types of microbreaks, the break length, and whether self-imposed or externally imposed affect microbreaks effectiveness on fatigue and performance; • examine whether other job resources and job crafting mechanisms can effectively reduce accountants' fatigue during busy season; • explore whether microbreaks and supervisory support can mitigate other types of job strain (e.g., stress) during both normal and busy season periods; • leverage tracking data from wearable electronics (e.g., a smartwatch) to further investigate the relationships between job demands, fatigue, sleep, and performance; and • examine the effects of other types of job strain present in the audit environment on decision quality and performance
Effects of fatigue on sleep quality and next-day fatigue	• Higher levels of end-of-day fatigue increase next-day fatigue both directly and indirectly through reductions in sleep quality during busy season (H3)		
Effects of fatigue on audit quality	• Fatigue negatively affects error detection • Microbreaks indirectly improve error detection by decreasing fatigue (H4)		

(Continues)

TABLE 4 (Continued)

Topic	Key findings	Key takeaways	
		Practical implications	Future research
JD-R theoretical application	• Microbreaks are associated with reduced fatigue in settings characterized by high workloads, long hours, or both (supporting the "boost hypothesis") • Supervisory support is associated with reduced fatigue in settings characterized by long hours or high workloads with long hours, but not with high workloads alone (supporting the "buffering hypothesis") • Job crafting mechanisms (i.e., microbreaks) may directly moderate job strain, introducing a new path to the JD-R model	• Firm and team leaders should provide support and encourage team members to take breaks in settings other than busy season when one type of job demand occurs without the other (e.g., normal hours with a heavy workload)	Future research should • test the boundary conditions of existing paths and explore possible new paths in the JD-R model and • continue to seek an understanding of how both job demands and resources can interact to influence accountants' job strain, as well as the outcomes of this strain on accountants' decision quality and performance

busy season; however, contrary to prior research (e.g., Kim et al., 2021), microbreaks do not mitigate end-of-day fatigue during normal periods in our study. This finding is consistent with JD-R theory (Bakker et al., 2023) and with prior accounting research that suggests accountants may be socialized into expecting and developing resistance to strain from regular job demands. These results further contribute to the literature on mechanisms that can mitigate accountants' job strain (e.g., stress, burnout; Almer & Kaplan, 2002; Jones et al., 2010) and on the benefits of supervisors' tacit skills (Andiola et al., 2021; Bol et al., 2018).

Second, we identify a new path in the JD-R model where job crafting (microbreaks) can have a *direct* mitigating effect on the relationship between job demands, both individually (hours worked or workload) and jointly (busy season), on job strain (fatigue). This result also advances knowledge of the efficacy of microbreaks in a cognitively demanding setting with significant workload demands and where social norms may discourage accountants from using microbreaks during their workday. This evidence extends existing findings on medical professionals by examining microbreaks "in the wild," absent intervention that could bias perceived efficacy.

Finally, our research design allows us insights into accountants' daily experiences across two distinct work periods. Future research can apply a bi-daily log approach to examine a wide range of experiences and outcomes across financial reporting, audit, tax, and managerial topics. For example, daily log studies can investigate conditions surrounding deadline pressure and auditors' behavioral responses. Similarly, future research can use daily logs to further examine factors influencing accountants' sleep quality, off-the-job methods of reducing stress and fatigue, turnover intentions, and many other process and outcome factors.

These results provide important practical guidance to accounting firms. Our study identifies two cost-effective strategies to reduce fatigue and burnout that our interviewees agree are implementable. First, our results suggest that firms and team leaders may need to more actively encourage team members to take breaks throughout the day during busy season, given that microbreak use is lower during busy season when these breaks are most beneficial. Second, our results indicate that firms should emphasize the importance of supporting staff, especially during busy season. Our findings suggest that firms may consider strategically placing staff who excel at soft skills on specific teams to alleviate fatigue, similar to research that finds "connector" employees can reduce turnover intentions and/or increase creativity (Autrey et al., 2019, 2024). Accounting firms may create training programs that focus on developing tacit knowledge to supplement skills learned on the job. This is especially important for newly promoted supervisors, who lack experience balancing supervisory responsibilities and work demands, and those who are not as naturally equipped with social and people skills (Jefferson & Andiola, 2024). By implementing these strategies, firms can enhance both employee well-being and audit quality, ultimately fostering a more sustainable and productive work environment.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author.

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REFERENCES

AICPA. (2019). *Workplace burnout: Why it happens, and how to reignite the flame*. https://www.aicpa.org/membership/discounts/savings-source-workplace-burnout.html

Almer, E. D., & Kaplan, S. E. (2002). The effects of flexible work arrangements on stressors, burnout, and behavioral job outcomes in public accounting. *Behavioral Research in Accounting*, *14*(1), 1–34.

Anderson-Gough, F., Grey, C., & Robson, K. (2001). Tests of time: Organizational time-reckoning and the making of accountants in two multi-national accounting firms. *Accounting, Organizations and Society*, *26*(2), 99–122.

Andiola, L. M., & Bedard, J. C. (2018). Delivering the "tough message": Moderators of subordinate auditors' reactions to feedback. *Accounting, Organizations and Society*, *70*, 52–68.

Andiola, L. M., Bedard, J. C., & Kremin, J. (2021). Coaching quality and subordinate work attitudes in the multiple supervisor audit context. *Accounting Horizons*, *35*(3), 23–46.

Andiola, L. M., Bedard, J. C., & Westermann, K. D. (2019). It's not my fault! Insights into subordinate auditors' attributions and emotions following audit review. *Auditing: A Journal of Practice & Theory*, *38*(1), 1–27.

Asay, H. S., Guggenmos, R., Kadous, K., Koonce, L., & Libby, R. (2022). Theory testing and process evidence in accounting experiments. *The Accounting Review*, *97*(6), 23–43.

Autrey, R. L., Bauer, T. D., Jackson, K. E., & Klevsky, E. (2019). Deploying "connectors": A control to manage employee turnover intentions? *Accounting, Organizations and Society*, *79*, 101059.

Autrey, R. L., Drasgow, F., Jackson, K. E., & Klevsky, E. (2024). Connectors: A catalyst for team creativity. *The Accounting Review*, *99*(1), 57–80.

Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*(3), 273–285.

Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, *10*(2), 170–180.

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. (2023). Job demands-resources theory: Ten years later. *Annual Review of Organizational Psychology and Organizational Behavior*, *10*, 25–53.

Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, *43*(1), 83–104.

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement particularly when job demands are high. *Journal of Educational Psychology*, *99*(2), 274–284.

Barnes, C. M. (2011). I'll sleep when I'm dead: Managing those too busy to sleep. *Organizational Dynamics*, *40*(1), 18–26.

Barnes, C. M., Schaubroeck, J., Huth, M., & Ghumman, S. (2011). Lack of sleep and unethical conduct. *Organizational Behavior and Human Decision Processes*, *115*(2), 169–180.

Barnes, C. M., & Watson, N. F. (2019). Why healthy sleep is good for business. *Sleep Medicine Reviews*, *47*, 112–118.

Bennett, A., Bakker, A. B., & Field, J. G. (2017). Recovery from work-related effort: A meta-analysis. *Journal of Organizational Behavior*, *39*(3), 262–275.

Bennett, G. B., Hatfield, R. C., & Stefaniak, C. (2015). The effect of deadline pressure on pre-negotiation positions: A comparison of auditors and client management. *Contemporary Accounting Research*, *32*(4), 1507–1528.

Bhaskar, L. S., Majors, T. M., & Vitalis, A. (2023). How does depletion interact with auditors' skeptical dispositions to affect auditors' challenging of managers in negotiations? *Contemporary Accounting Research*, *40*(4), 2288–2313.

Bliese, P. D., Edwards, J. R., & Sonnentag, S. (2017). Stress and well-being at work: A century of empirical trends reflecting theoretical and societal influences. *Journal of Applied Psychology*, *102*(3), 389–402.

Bol, J. C., Estep, C., Moers, F., & Peecher, M. E. (2018). The role of tacit knowledge in auditor expertise and human capital development. *Journal of Accounting Research*, *56*(4), 1205–1252.

Bosch, C., & Sonnentag, S. (2019). Should I take a break? A daily reconstruction study on predicting micro-breaks at work. *International Journal of Stress Management*, *26*(4), 378–388.

Buchheit, S., Dalton, D. W., Harp, N. L., & Hollingsworth, C. W. (2016). A contemporary analysis of accounting professionals' work-life balance. *Accounting Horizons*, *30*(1), 41–62.

Cham, B. S., Andrei, D. M., Griffin, M. A., Grech, M., & Neal, A. (2021). Investigating the joint effects of overload and underload on chronic fatigue and wellbeing. *Work & Stress*, *35*(4), 344–357.

Chawla, N., MacGowan, R. L., Gabriel, A. S., & Podsakoff, N. P. (2020). Unplugging or staying connected? Examining the nature, antecedents, and consequences of profiles of daily recovery experiences. *Journal of Applied Psychology*, *105*(1), 19–39.

Christensen, B. E., Newton, N. J., & Wilkins, M. S. (2021). How do team workloads and team staffing affect the audit? Archival evidence from US audits. *Accounting, Organizations and Society*, *92*, 101225.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*(2), 310–357.

Covaleski, M. A., Earley, C. E., & Zehms, K. M. (2021). The lived reality of public accounting interns. *Journal of Accounting Education*, *56*, 100743.

Craighead, C. W., Ketchen, D. J., Dunn, K. S., & Hult, G. T. M. (2011). Addressing common method variance: Guidelines for survey research on information technology, operations, and supply chain management. *Institute of Electrical and Electronics Engineers Transactions on Engineering Management*, *58*(3), 578–588.

Cropanzano, R., Rupp, D. E., & Byrne, Z. S. (2003). The relationship of emotional exhaustion to work attitudes, job performance, and organizational citizenship behaviors. *Journal of Applied Psychology*, *88*(1), 160–169.

Dalton, D. W., Davis, A. B., & Viator, R. E. (2015). The joint effect of unfavorable supervisory feedback environments and external mentoring on job attitudes and job outcomes in the public accounting profession. *Behavioral Research in Accounting*, *27*(2), 53–76.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resource model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512.

Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology*, *86*(1), 42–51.

Eisenberger, R., Huntington, R., Hutchinson, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, *71*(3), 500–507.

Farrell, A. M., Grenier, J. H., & Leiby, J. (2017). Scoundrels or stars? Theory and evidence on the quality of workers in online labor markets. *The Accounting Review*, *92*(1), 93–114.

Fogarty, T. J., Singh, J., Rhoads, G. K., & Moore, R. K. (2000). Antecedents and consequences of burnout in accounting: Beyond the role stress model. *Behavioral Research in Accounting*, *12*, 31–67.

Fritz, C., & Sonnentag, S. (2006). Recovery, well-being, and performance-related outcomes: The role of workload and vacation experiences. *Journal of Applied Psychology*, *91*(4), 936–945.

Guarana, C. L., Ryu, J. W., O'Boyle, E. H., Jr., & Lee, J. (2021). Sleep and self-control: A systematic review and meta-analysis. *Sleep Medicine Reviews*, *59*, 101514.

Hanson, J. (2013, May 10). *Keynote address* [Speech transcript]. American Accounting Association 2013 Annual Ohio Region Meeting, Huron, OH. https://pcaobus.org/news-events/speeches/speech-detail/keynote-address_464

Helton, W. S., Hollander, T. D., Warm, J. S., Tripp, L. D., Parsons, K., Matthews, G., Dember, W. N., Parasuraman, R., & Hancock, P. A. (2007). The abbreviated vigilance task and cerebral hemodynamics. *Journal of Clinical and Experimental Neuropsychology*, *29*(5), 545–552.

Heo, J. S., Kwon, S. Y., & Tan, H. T. (2021). Auditors' responses to workload imbalance and the impact on audit quality. *Contemporary Accounting Research*, *38*(1), 338–375.

Herda, D. N., & Lavelle, J. J. (2012). The auditor-audit firm relationship and its effect on burnout and turnover intention. *Accounting Horizons*, *26*(4), 707–723.

Hildenbrand, K., Sacramento, C. A., & Binnewies, C. (2018). Transformation leadership and burnout: The role of thriving and followers' openness to experience. *Journal of Occupational Health Psychology*, *23*(1), 31–43.

Hobman, E. V., Restubog, S. L. D., Bordia, P., & Tang, R. L. (2009). Abusive supervision in advising relationships: Investigating the role of social support. *Applied Psychology*, *58*(2), 233–256.

Hunter, E. M., & Wu, C. (2016). Give me a better break: Choosing workday break activities to maximize resource recovery. *Journal of Applied Psychology*, *101*(2), 302–311.

Hurley, P. J. (2017). Ego depletion and auditors' busy season. *Behavioral Research in Accounting*, *29*(2), 25–35.

Hurley, P. J. (2019). Ego depletion and auditors' JDM quality. *Accounting, Organizations and Society*, *77*, 101048.

Hurley, P. J. (2023). Making sense of ego depletion: The replication crisis, a path forward, and lessons for accounting researchers. *Auditing: A Journal of Practice & Theory*, *42*(2), 163–181.

Hux, C. T., Andiola, L. M., & Noga, T. J. (2024). Auditors' and tax specialists' interprofessional collaboration during audit engagements: Implications for audit production and audit quality. *Behavioral Research in Accounting*. Advance online publication. https://doi.org/10.2308/BRIA-2023-018

IAASB. (2014). *A framework for audit quality: Key elements that create an environment for audit quality*. https://www.ifac.org/publications-resources/framework-audit-quality-key-elements-create-environment-audit-quality

Jefferson, D., & Andiola, L. M. (2024). *Supervisor-subordinate communication in the contemporary audit environment: A needs-based perspective*. Working paper, Virginia Commonwealth University and Wake Forest University.

Jones, A., III, Norman, C. S., & Wier, B. (2010). Healthy lifestyle as a coping mechanism for role stress in public accounting. *Behavioral Research in Accounting*, *22*(1), 21–41.

Kanfer, R. (2011). Determinants and consequences of subjective cognitive fatigue. In P. L. Ackerman (Ed.), *Cognitive fatigue: Multidisciplinary perspectives on current research and future applications* (pp. 189–207). American Psychological Association.

Khavis, J. A., & Krishnan, J. (2021). Employee satisfaction and work-life balance in accounting firms and audit quality. *Auditing: A Journal of Practice & Theory*, *40*(2), 161–192.
Kim, S., Cho, S., & Park, Y. (2021). Daily microbreaks in a self-regulatory resources lens: Perceived health climate as a contextual moderator via microbreak autonomy. *Journal of Applied Psychology*, *107*(1), 60–77.
Kim, S., Park, Y., & Headrick, L. (2018). Daily micro-breaks and job performance: General work engagement as a cross-level moderator. *Journal of Applied Psychology*, *103*(7), 772–786.
Kim, S., Park, Y., & Niu, Q. (2017). Micro-break activities at work to recover from daily work demands. *Journal of Organizational Behavior*, *38*(1), 28–44.
Knechel, W. R., Mao, J., Qi, B., & Zhuang, Z. (2021). Is there a brain drain in auditing? The determinants of auditors leaving public accounting. *Contemporary Accounting Research*, *38*(4), 2461–2495.
Kuhnel, J., Zacher, H., de Bloom, J., & Bledow, R. (2017). Take a break! Benefits of sleep and short breaks for daily work engagement. *European Journal of Work and Organizational Psychology*, *26*(4), 481–491.
Lee, A., Thomas, G., Martin, R., & Guillaume, Y. (2019). Leader-member exchange (LMX) ambivalence and task performance: The cross-domain buffering role of social support. *Journal of Management*, *45*(5), 1927–1957.
Lee, K. E., Williams, K. J. H., Sargent, L. D., Williams, N. S. G., & Johnson, K. A. (2015). 40-second green roof views sustain attention: The role of micro-breaks in attention restoration. *Journal of Environmental Psychology*, *42*, 182–189.
Lee, K. E., Williams, K. J. H., Sargent, L. D., Williams, N. S. G., & Johnson, K. A. (2017). Green micro-breaks: Viewing workplace nature improves mood and performance. *Academy of Management Proceedings*, *2017*(1), 11996.
Leiby, J., Rennekamp, K., & Trotman, K. T. (2021). Challenges to experimental audit JDM research and the role of online platforms in resolving these challenges. *Auditing: A Journal of Practice & Theory*, *40*(3), 53–72.
López, D. M., & Peters, G. F. (2012). The effect of workload compression on audit quality. *Auditing: A Journal of Practice & Theory*, *31*(4), 139–165.
Lorist, M. M. (2008). Impact of top-down control during mental fatigue. *Brain Research*, *1232*, 113–123.
Lorist, M. M., & Faber, L. G. (2011). Consideration of the influence of mental fatigue on controlled and automatic cognitive processes and related neuromodulatory effects. In P. L. Ackerman (Ed.), *Cognitive fatigue: Multidisciplinary perspectives on current research and future applications* (pp. 105–126). American Psychological Association.
Marcora, S. M., Staiano, W., & Manning, V. (2009). Mental fatigue impairs physical performance in humans. *Journal of Applied Physiology*, *106*(3), 857–864.
Meijman, T. F., & Mulder, G. (1998). Psychological aspects of workload. In P. J. D. Drenth, H. Thierry, & C. J. de Wolfe (Eds.), *Handbook of work and organizational psychology: Work psychology* (pp. 5–33). Psychology Press.
Mendoza, K. I., & Winn, A. (2022). Improving performance on low-level audit tasks: The interactive effect of regulatory fit and professional identity. *The Accounting Review*, *97*(7), 379–400.
Mullis, C. E., & Hatfield, R. C. (2018). The effects of multitasking on auditors' judgment quality. *Contemporary Accounting Research*, *35*(1), 314–333.
Murphy, B. (2021, October 5). *At pandemic peak, 1 in 3 resident doctors in NYC experienced burnout*. American Medical Association. https://www.ama-assn.org/residents-students/resident-student-health/pandemic-peak-1-3-resident-doctors-nyc-experienced
Newsom, R., & Rehman, A. (2024, January 16). *Sleep debt: The hidden cost of insufficient rest*. The Sleep Foundation. https://www.sleepfoundation.org/how-sleep-works/sleep-debt-and-catch-up-sleep
Payton, L. T. (2023, February 28). Amazon CEO Andy Jassy orders employees back to the office 3 days a week—And maybe he's right. Here's how WFH impacts your brain and body. *Fortune*. https://fortune.com/well/2023/02/28/what-remote-work-does-to-your-brain-and-body/
PCAOB. (2024). *Firm and engagement metrics proposal*. PCAOB Release No. 2024-002 https://pcaobus.org/news-events/news-releases/news-release-detail/pcaob-issues-proposals-on-standardizing-disclosure-of-firm-and-engagement-metrics-and-modernizing-the-pcaob-s-reporting-framework#:~:text=The%20proposed%20metrics%20cover%20(1,hours%2C%20(9)%20quality%20performance
Persellin, J. S., Schmidt, J. J., Vandervelde, S. D., & Wilkins, M. S. (2019). Auditor perceptions of audit workloads, audit quality and job satisfaction. *Accounting Horizons*, *33*(4), 95–117.
Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903.
Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, *12*(4), 531–544.
Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891.
Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, *87*(4), 698–714.
Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, *25*(3), 293–315.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire. *Education and Psychological Measurement*, *66*(4), 701–716.
Schilpzand, P., Houston, L., & Cho, J. (2018). Not too tired to be proactive: Daily empowering leadership spurs next-morning employee proactivity as moderated by nightly sleep quality. *Academy of Management Journal*, *61*(6), 2367–2387.
Schmeichel, B. J., & Vohs, K. D. (2009). Self-affirmation and self-control: Affirming core values counteracts ego depletion. *Journal of Personality and Social Psychology*, *96*(4), 770–782.
Seiger, C. P., & Wiese, B. S. (2009). Social support from work and family domains as an antecedent or moderator of work-family conflicts. *Journal of Vocational Behavior*, *75*(1), 26–37.
Smith, K. J., Everly, G. S., Jr., & Johns, T. R. (1993). The role of stress arousal in the dynamics of the stressor-to-illness process among accountants. *Contemporary Accounting Research*, *9*(2), 432–449.
Sonnentag, S., Arbeus, H., Mahn, C., & Fritz, C. (2014). Exhaustion and lack of psychological detachment from work during off-job time: Moderator effects of time pressure and leisure experiences. *Journal of Occupational Health Psychology*, *19*(2), 206–216.
Sonnentag, S., & Zijlstra, F. R. H. (2006). Job characteristics and off-job activities as predictors of need for recovery, well-being, and fatigue. *Journal of Applied Psychology*, *91*(2), 330–350.
Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal conflict at work scale, organizational constraints scale, quantitative workload inventory, and physical symptoms inventory. *Journal of Occupational Health Psychology*, *3*(4), 356–367.
Steidle, A., Gonzalez-Morales, M. G., Hoppe, A., Michel, A., & O'Shea, D. (2017). Energizing respites from work: A randomized controlled study on respite interventions. *European Journal of Work and Organizational Psychology*, *26*(5), 650–662.
Sweeney, J. T., & Summers, S. L. (2002). The effect of the busy season workload on public accountants' job burnout. *Behavioral Research in Accounting*, *14*(1), 223–245.
Tadic, M., Bakker, A. B., & Oerlemans, W. G. M. (2015). Challenge versus hindrance job demands and well-being: A diary study on the moderating role of job resources. *Journal of Occupational and Organizational Psychology*, *88*(4), 702–725.
Temple, J. G., Warm, J. S., Dember, W. N., Jones, K. S., LaGrange, C. M., & Matthews, G. (2000). The effects of signal salience and caffeine on performance, workload and stress in an abbreviated vigilance task. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, *42*(2), 183–194.
Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior*, *80*(1), 173–186.
Tsipursky, G. (2023, April 20). Work-from-home burnout and Zoom fatigue is a lot more complex than you think. *Forbes*. https://www.forbes.com/sites/glebtsipursky/2023/04/20/work-from-home-burnout-and-zoom-fatigue-is-a-lot-more-complex-than-you-think/?sh=29f57ed9698e
van der Linden, D. (2011). The urge to stop: The cognitive and biological nature of acute mental fatigue. In P. L. Ackerman (Ed.), *Cognitive fatigue: Multidisciplinary perspectives on current research and future applications* (pp. 149–164). American Psychological Association.
van der Linden, D., & Eling, P. (2006). Mental fatigue disturbs local processing more than global processing. *Psychological Research*, *70*(5), 395–402.
van Hooff, M. L., Geurts, S. A., Beckers, D. G., & Kompier, M. A. (2011). Daily recovery from work: The role of activities, effort and pleasure. *Work & Stress*, *25*(1), 55–74.
Walker, M. (2017). *Why we sleep: Unlocking the power of sleep and dreams*. Scribner.
Wharton, A. S. (1993). The affective consequences of service work. *Work and Occupations*, *20*(2), 205–232.
Wright, T. A., & Cropanzano, R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology*, *83*(3), 486–493.
Yam, K. C., Chen, X.-P., & Reynolds, S. J. (2014). Ego depletion and its paradoxical effects on ethical decision making. *Organizational Behavior and Human Decision Processes*, *124*(2), 204–214.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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APPENDIX: VARIABLE MEASUREMENT ITEMS

Panel A: End-of-day fatigue

	Items	Mean	WSD (BSD)
	1. This evening, I feel emotionally drained.	3.05	1.17 (0.75)
	2. This evening, I feel used up.	2.98	1.22 (0.80)
	3. This evening, I feel burned out.	2.93	1.23 (0.78)
	FATIGUE ($\alpha = 0.94$)	2.99	1.14 (0.75)

Panel B: Microbreak activities

Dimension	Items	Mean	WSD (BSD)
Relaxation activities	1. Stretching, walking around the office, relaxing briefly	3.06	1.01 (0.72)
	2. Daydreaming, gazing out of the office windows, taking quick naps, any other psychological relaxation	2.28	1.05 (0.81)
Nutrition activities	3. Drinking coffee, black tea, green tea, or other caffeinated beverages	2.45	1.09 (0.95)
	4. Snacking or drinking noncaffeinated beverages (e.g., juice)	2.53	1.05 (0.79)
Social activities	5. Texting, using instant messenger, or phoning friends or family members	2.91	1.09 (0.85)
	6. Chatting with coworkers on nonwork-related topics	2.34	0.99 (0.77)
	7. Checking personal social networking sites (e.g., Facebook, Twitter, and personal blogs)	2.36	1.25 (1.07)
Cognitive activities	8. Reading nonwork-related books, newspapers, and magazines	1.42	0.84 (0.63)
	9. Surfing the web for nonwork purposes (e.g., online shopping, banking, checking personal emails, and watching short news or video clips), or learning activities	2.10	1.03 (0.65)
	MICROBREAKS	2.38	0.57 (0.46)

Panel C: Supervisory support

	Items	Mean	WSD (BSD)
	1. Today, my direct supervisor showed care for my well-being.	3.44	1.06 (0.67)
	2. Today, help was available from my direct supervisor when I had a problem.	3.75	0.96 (0.62)
	3. Today, my direct supervisor appreciated my efforts.	3.65	0.98 (0.65)
	4. Today, my direct supervisor showed care for my opinions.	3.62	1.00 (0.68)
	SUPPORT ($\alpha = 0.91$)	3.61	0.89 (0.61)

Note: This Appendix presents the scales used to measure the dependent variable and independent variables. Panel A presents the scale used to measure end-of-day fatigue, adapted from the Emotional Exhaustion scale (Wharton, 1993). Each item is measured on a Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). Panel B presents the scale used to measure daily microbreaks, adapted from Kim et al. (2017, 2018). Each item is measured on a scale ranging from *Never* (0 times) to *Very frequently* (>5 times). Panel C presents the scale used to measure supervisory support, adapted from the POS scale (Eisenberger et al., 1986). Each item is measured on a Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5).