

Neurotic and Need a Nap: How Personality Affects Weekend Recovery, Engagement, and

Exhaustion

By

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## **Abstract**

Workplace recovery is defined as the process of replenishing expended resources that were lost at work (Sonnentag & Fritz, 2007; Bennett et al., 2015). This process is important for employee productivity, health, and well-being, as it helps employees reduce negative outcomes from demands and decreases short-term strain reactions (Sonnentag et al, 2010). To fully examine the recovery process, two studies were conducted examining how engaging in each of four recovery experiences over a weekend may lead to a change in employee engagement and exhaustion levels. A second goal of this study was to examine the moderating role of neuroticism on the relationship between weekend recovery experiences and changes in exhaustion and engagement over the weekend. The first study was conducted with a sample of 163 nurses, and the second study was conducted with a sample of 14 nurses. There were no significant findings from either study. Exploratory analysis, however, revealed that mastery was a valid predictor of nurses level of engagement on Monday morning. Furthermore, the results indicated that neuroticism was a moderator of the relationship between mastery and control activities and engagement levels on Monday morning. These findings highlight the importance of engaging in mastery and control experiences for increased engagement at work.

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## Literature Review

### Introduction

Work can be a demanding environment where individuals face a variety of challenges. With increasing transformations to the workplace, such as globalized competition, technological advancements, and changes in how work is organized, demands that employees face are growing (Spanouli & Hofmans, 2020). As a result of these transformations, employees are expected to work longer hours, be increasingly accessible outside of traditional work times, and deal with heightened work stressors (Spanouli & Hofmans, 2020). For example, The International Labour Office defines 48 hours of work per week as “excessively long hours of work” (Messenger, 2018). However, around one-third of the world’s workforce work over 48 hours per week, or excessively long hours (Messenger, 2018). These changing expectations in the workplace may require individuals to use more of their personal resources, such as time and energy, for successful work performance. These job demands and challenges and the need to expend personal resources can lead to the development of burnout.

Burnout is defined as a stress syndrome that results from repeated exposure to job stress, that can lead to exhaustion and unfavorable attitudes about work (De Hert, 2020; Bakker et al., 2014). It is characterized by the presence of emotional exhaustion, depersonalization, and a decreased sense of accomplishment (Barello et al., 2020). Burnout has various consequences for individuals and organizations, as it impacts employee behavior and functioning, as well as their physical and mental health (Bakker et al., 2014). Research on burnout found it to be related to negative changes in psychological health, such as an increase in depression and anxiety symptoms, and alcohol abuse. Burnout has also been found to be a predictor of life

dissatisfaction. Additionally, burnout impacts physical health and leads to increased absences from work. A study conducted on social workers found that individuals with higher levels of burnout experience more health problems, such as trouble sleeping, headaches, respiratory problems, and gastrointestinal issues (Kim et al., 2011 & Bakker et al., 2014). Not only does burnout have health-related outcomes, but it also has work-related outcomes. Various studies have found support for the negative relationship between burnout and job performance (Bakker et al., 2014).

One potential way for employees to combat burnout is by recovering expended resources that were lost at work (Bennett et al., 2015). This process of rebuilding after resource loss is referred to as recovery (Sonnentag & Fritz, 2007). Recovery processes can occur during multiple time periods, including breaks from work during the day, evenings, weekends, and vacations (Sonnentag et al., 2012). More specifically, weekends provide an extended period for individuals to rest and gain new resources while work demands are likely not present (Pereira & Elfering, 2014). Because weekends offer a longer time for individuals to engage in recovery activities than breaks or evenings, the goal of the present study is to examine the impact of recovery experiences on changes in employee engagement and exhaustion over the weekend.

Recovery can also be impacted by individual differences (Wendsche & Lohmann-Haislah, 2017), including the Big Five personality traits, as well as positive and negative affect. Previous studies have examined personality as a predictor of recovery (Sonnentag & Fritz, 2007). More specifically, neuroticism is one of the main traits associated with recovery-related outcomes (Bakker et al., 2010). For example, individuals who exhibit higher levels of neuroticism have an increased likelihood to interpret a situation as stressful. Additionally, these individuals are increasingly sensitive to negative stimuli, which can worsen the effects of work

stressors on strain (Ragsdale, Hoover & Woods, 2016). Individual differences, like neuroticism, may influence the type of recovery activities that employees benefit from the most (Sonnentag & Fritz, 2007). As a result, a second goal of the present study is to investigate if neuroticism moderates the relationship between recovery activities and exhaustion and engagement (Bakker et al., 2010).

## **Recovery**

Recovery is an essential way for employees to recuperate from work demands and improve well-being (Headrick, et al., 2022). As employees face a variety of demands from their daily work, recovery is vital for helping employees unwind during their off time (Sonnentag, Binneweis, & Mojza, 2010). Recovery is important because it helps employees reduce negative outcomes from demands and decreases short-term strain reactions (Sonnentag et al, 2010). Recovery has been defined as the restoration of positive states (e.g., vigor) and reduction of negative states (e.g., fatigue) (Sonnentag, 2012). It is important to note that recovery from work-related stressors and demands not only refers to the absence of negative states but also the increase of positive states (Sonnentag, 2012). Increasing positive states is important because of the existing relationship with well-being and job performance (Sonnentag, 2012). Recovery can occur during work breaks, evenings after work, weekends, and vacations (Sonnentag, 2012) Two main theoretical frameworks have been used to operationalize recovery, which are the Effort-Recovery model (Meijman & Mulder, 1998) and the Conservation of Resources theory (Hobfoll, 1989). The Effort-Recovery model states that work requires employees to use effort, which leads to load reactions (Sonnentag & Fritz, 2007, Molino et al., 2018). Ideally, load reactions disappear when work demands are no longer present and the employee experiences recovery (Sonnentag & Fritz, 2007, Molino et al., 2018). This model defines recovery as a process that eliminates or

reduces negative load reactions that occur when employees must confront work demands and tasks (Chan et al., 2022).

Alternatively, the Conservation of Resources (COR) theory attempts to explain how individuals react to stressors and job demands present in their environment. The theory states that an individual builds up a pool of resources over time and that stress occurs when these resources are threatened or lost (Halbesleben et al., 2014; Hobfoll, 1989). Resources are also expended to face job demands and job stressors (Hobfoll, 1989). Resources are defined as “objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies” (Hobfoll, 1989, pg. 45). In other words, individual resources are depleted when employees are faced with job demands or challenges that occur in the work environment. Even when individuals are not facing stress or challenges at work, resources, such as time and energy, still must be expended to face day-to-day job demands. The Conservation of Resources theory states that to recover from work stress, individuals must replenish resources that were lost due to job demands and gain new resources (Hobfoll, 1989; Molino et al., 2018). As a result, individuals seek to regain resources that they have lost and to gain additional resources to sustain their health and perform effectively in the workplace (Headrick et al., 2022). For this paper's purposes, recovery will be operationalized based on the Conservation of Resources Theory.

COR theory has several key principles. The first principle focuses on the primacy of resource loss and states that resource loss is more salient than resource gain, meaning that resource loss or depletion will have a bigger impact than resource gain (Halbesleben et al., 2014; Hobfoll, 2001). For example, the loss of pay will have a greater negative impact on an individual than the same increase in pay would have been helpful (Halbesleben et al., 2014). Indeed, studies have shown that losses at work can render employees more vulnerable to developing strain in the

form of burnout (Shirom, 1989), depression (Kessler et al., 1988), and physiological outcomes (DeVente, et al., 2003). Because losses can lead to such extreme and harmful consequences, they are more salient than resource gain (Halbesleben et al., 2014).

The second principle of COR is resource investment, which states that people invest resources to stop future resource loss and recover from previous losses, while acquiring additional or new resources (Hobfoll, 2001). For example, Halbesleben and Bowler (2007) found that emotional exhaustion led to an increase in performing organizational citizenship behaviors. Their results indicated that investing in organizational citizenship behaviors (OCBs) was helpful in regaining short-term resources that were lost and protecting against or slowing further resource loss (Halbesleben & Bowler, 2007). In other words, employees strategically invested their personal resources into performing OCBs as a response to emotional exhaustion in order to gain more social support from their coworkers. In the context of COR theory, performing OCBs represents expending personal resources as a way to recover from previous loss. By investing in social support resources in the form of performing OCBs and helping coworkers, employees were attempting to combat the effects of emotional exhaustion and burnout by strengthening their support system that could help them recover from previously lost resources (Halbesleben & Bowler, 2007). However, if an individual cannot recover from losses, a loss spiral may develop.

A loss spiral is defined as a lack of resources, which leads to additional losses (Hobfoll, 2001). Loss spirals occur due to the stress of losing resources, which then prompts individuals to invest further resources to generate new ones (Hobfoll, 2011). As a result, people are more vulnerable to losses once they initially occur (Hobfoll, 2001). Demerouti et al., (2004) provided an example of an employee with high work demands who is facing job insecurity. Prolonged exposure to these work stressors may result in chronic stress that is not easily alleviated during non-work time. As a result, the employee may have trouble sleeping and recovering at home

from workplace demands, which could cause exhaustion or a breakdown (Demerouti et al., 2004). After work, it is important that employees disengage from the demands of the day and engage in recovery, which can help generate new resources. Otherwise, chronic loss of resources without recovery could lead to a loss spiral, and hinder employee performance (Bennett et al., 2018).

Alternatively, gain spirals can also occur. Gain spirals refer to the phenomenon of having resources, which leads to further resource gain (Hobfoll, 2001). In other words, those who possess resources have more capability to gain resources in the future. For example, a study on students found that increasing their task resources (i.e., time control and method control) helped to increase engagement. Increased engagement then helped to increase task resources over time (Llorens et al., 2007).

### ***Recovery Activities***

There are four primary types of recovery experiences recognized in the recovery literature (Barber et al., 2019; Bennett, et al., 2015; Headrick et al., 2022; Molino et al., 2018). These recovery experiences are psychological detachment, relaxation, mastery, and control (Bennett, et al., 2015; Headrick, et al., 2022; Sonnentag, et al., 2012). Psychological detachment is defined as mentally and physically disconnecting from one's work during non-work time (Chawla et al., 2020; Sonnentag, et al., 2012). Relaxation refers to having a state of low activation, both physically and psychologically, such as meditating or taking a nap (Bennett, et al., 2015; Hahn et al., 2011; Sonnentag, et al., 2012). Mastery experiences are defined as challenging activities outside of the job that provide learning opportunities, such as playing a sport or learning how to play an instrument (Bennett, et al., 2015; Hahn et al., 2011; Sonnentag, et al., 2012). Control refers to having a feeling of autonomy over one's time outside of work and

being able to choose what activities to engage in during non-work time (Bennett, et al., 2015; Chawla et al., 2020; Hahn et al., 2011).

Recovery experiences during non-work time are important for individual outcomes (Sonnentag et al., 2012). Research has shown that recovery can decrease strain symptoms that individuals develop as a result of facing job demands, such as distress, anger, anxiety, and fatigue and depression (Sonnentag et al., 2022). Research on individual recovery experiences indicates that psychological detachment and relaxation are the most beneficial for enhancing employee functioning at work (Headrick et al., 2022). Compared to what is known about psychological detachment and recovery, the body of research on control and mastery experiences is relatively small (Headrick et al., 2022). Existing research does state that mastery and control may decrease strain and increase personal resources that positively contribute to work performance; however, the results on these studies differ (Headrick et al., 2022; Kinnunen et al., 2010; Siltaloppi et al., 2009). The outcomes of recovery experiences are discussed in more detail below.

### **Outcomes of Recovery**

Recovery research has indicated that there are varied outcomes of recovery. These outcomes can be characterized in two ways: successful recovery or unsuccessful recovery. For the purposes of this study, successful recovery refers to replenishing expended resources that may result in positive outcomes for the individual. This may include improved affective states (e.g., feeling more energetic or relaxed; Sonnentag et al., 2022), increased well-being and health (Chawla et al., 2020; Ginoux et al., 2020), pleasant motivational states (Sonnentag et al., 2022), and better performance (Sonnentag et al., 2022). For example, psychological detachment has been found to sustain engagement at work, regardless of the number or intensity of job demands

(Sonnentag et al., 2010). Further, increased work performance was predicted by feelings of being recovered after engaging in recovery experiences during non-work time (Binneweis et al., 2009).

Sometimes, people do not recover resources during non-work time. I refer to this as unsuccessful recovery. Unsuccessful recovery can be described as the failure to recover resources, especially during non-work hours when recovery opportunities were lost as a response to job demands, which may result in negative outcomes for the individual. Outcomes of unsuccessful recovery can include exhaustion. For example, individuals who are unable to psychologically detach from work were more likely to show increased levels of exhaustion over time (Gu & You 2020; Schulz et al., 2021; Sianoja et al., 2018; Sonnentag et al., 2010). Burnout is another unsuccessful outcome of recovery, which can occur from chronic feelings of exhaustion (Andreassen et al., 2007; Bennett et al., 2018; Headrick et al., 2022).

### ***Engagement***

One outcome of successful work recovery is increased engagement (Chawla et al., 2020; Headrick et al., 2022). Work engagement is defined as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli et al., 2002, p. 74). Recovery has been shown to positively impact vigor, dedication, and absorption (Sonnentag et al., 2003). For example, recovered individuals will experience more vigor and be able to give more effort to work tasks (Sonnentag et al., 2003). Additionally, when employees are enthusiastic about their work, the likelihood that employees will show more commitment to their organization and want to further improve it increases (Demerouti et al., 2001; Headrick et al., 2022; Sonnentag et al., 2003). Different recovery experiences can impact work engagement in different ways. For example, engaging in control experiences predicted higher levels of self-regulation, which can positively impact work engagement (Ragsdale & Beehr, 2016).

### ***Work-Life Balance***

Recovery can also have an impact on work-life balance. Because employees have a finite amount of resources to utilize at work and at home, how employees choose to manage their work demands can deplete their resources for engaging with others outside of work (Barber et al., 2019). Thus, recovery experiences are important for maintaining work-life balance. Previous research has indicated that recovery activities predict overall satisfaction with work-life balance (Barber et al., 2019; Sonnentag & Fritz, 2007). When individuals have poor work-life balance, they may be more likely to devote their resources to work demands, even during non-work time (Barber et al., 2019; Newman et al., 2014). Devoting resources to work demands during non-work time can interfere with the (re)generation of new resources because individuals are neglecting to engage in recovery activities (Barber et al., 2019).

### ***Well-Being***

Well-being is another important and commonly studied outcome of recovery. Research indicates that people who face more job stressors experience lower well-being than individuals who experience fewer work stressors (Sonnentag 2018). Recovery activities can help individuals replenish resources spent coping with the stressors, which in turn can increase individual well-being (Sonnentag & Fritz, 2007). For example, engaging in psychological detachment during non-work time is associated with positive well-being (Sonnentag, 2018). Previous studies have suggested that a lack of detachment during non-work time can lead to decreased positive emotions (Rodriguez-Munoz et al., 2018), higher strain (Debrot et al., 2018), decreased energy levels (Germeys & De Gieter, 2018), and negative states at nighttime and the next morning (Sonnentag, 2018). When an individual does not properly recover from work stressors, strain will build up over time and can lead to significant health problems, burnout, or depression (Crawford et al., 2010; Nixon et al., 2011; Sonnentag & Fritz, 2007). Additionally, engagement in recovery

is positively related to life satisfaction (Sonnentag & Fritz, 2007). Individuals who are happy with their recovery experiences and how they spend their non-work time can lead to increased life satisfaction (Sonnentag & Fritz, 2007). In sum, successful recovery can lead to improved well-being and, unsuccessful recovery from work stressors can lead to the development of poor well-being (Sonnentag & Fritz, 2007).

### ***Exhaustion***

While employees being more recovered can lead to increased work engagement, unsuccessful recovery from work may lead to increased exhaustion, which can lead to a decrease in physical health (Headrick et al., 2022). Exhaustion is defined as a state that is identified by feeling drained, as well as physical, emotional, and psychological fatigue (Maslach & Jackson, 1986). Experiencing increased levels of exhaustion for an extended period of time can result in increased activation of physiological systems that handle stress, leading individuals to expend greater effort for daily functioning (Headrick et al., 2022). Increased activation of physiological systems and increased effort then lead to a higher number of health complaints, such as headaches and backaches (Nixon et al., 2011). Additionally, increased exhaustion is positively related to various other health complaints, such as neck and stomach pain, increased absenteeism, and decreased sleep quality (van Veldhoven & Sluiter, 2009).

### **Recovery Activities**

Up to this point, only a cursory description of recovery activities has been presented. In the sections below, I present a more detailed description of four recovery activities commonly studied in the recovery literature. It is worth noting that other taxonomies exist to describe recovery, such as the recovery experience approach, which emphasizes low-duty and high-duty profiles (Sonnentag et al., 2022), however, previous research suggests that the best and most common way to discuss recovery is using the four recovery activities outlined below (Bennett et

al., 2018; Headrick et al., 2022). For the purposes of this study, the recovery activity approach will be used.

### ***Psychological Detachment***

Psychological detachment is defined as an experience that occurs when an individual is not working and does not have work-related thoughts (Sonnentag & Niessen, 2020), such as, not answering work-related calls or emails at home (Sonnentag et al., 2012). This process can occur naturally or intentionally, meaning an individual can automatically engage in another activity that uses mental energy, or they can make a conscious effort to mentally disengage from work, such as meditation (Sonnentag & Niessen, 2020). Being psychologically detached from work aids recovery because employees are temporarily not engaging in job related thoughts, worries, problem-solving, or planning (Sonnentag & Niessen, 2020). In other words, they are not expending mental resources thinking about work while not at work.

Psychological detachment can impact various outcomes, such as affective states, health, and well-being (Feuerhahn, et al., 2014; Sonnentag & Niessen, 2020). Research on psychological detachment has indicated that individuals who engage in this process exhibit higher satisfaction with their lives and have fewer symptoms of psychological strain while still being able to engage in their work (Sonnentag, 2012). For example, employees who psychologically detach from work have reported increased psychological well-being compared to individuals who tend to think about work in their free time (Sonnentag, 2012). Research has also suggested that psychological detachment is related to increased positive affect and decreased negative affect (Sonnentag & Niessen, 2020). For example, when individuals are not psychologically detached from work, they are likely to have negative thoughts related to the job, which is what increases negative affect (Sonnentag & Niessen, 2020). Although various studies (Bennett et al., 2018; Chawla et al., 2020; Sonnentag et al., 2017) have emphasized the importance of psychological

detachment for personal recovery outcomes, such as exhaustion, the findings regarding work-related outcomes are mixed (Headrick et al., 2022). For example, some studies found that psychological detachment had weak or nonsignificant with work-related outcomes, like engagement (Fritz et al., 2010). Additionally, Lloyd (2023) found that psychological detachment did not have a significant impact on Monday morning employee exhaustion or engagement levels. Thus, further study of these relationships is warranted. Altogether, this leads to the following hypotheses regarding psychological detachment and recovery:

*Hypothesis 1a: Engaging in psychological detachment over the weekend will be positively associated with changes in engagement from Friday afternoon to Monday morning.*

*Hypothesis 1b: Engaging in psychological detachment over the weekend will be negatively associated with changes in exhaustion from Friday afternoon to Monday morning.*

### ***Relaxation***

Another recovery experience that has benefits for employees is relaxation, which refers to the calming of the body and mind due to low sympathetic activation, which can occur through various processes, such as meditation or reading a book (Sonnentag, et al., 2022). The relaxation process can occur through deliberate attempts (e.g., breathing exercises), as well as through engaging in other calming leisure activities, such as listening to classical music or taking a nap (Sonnentag et al, 2012). Relaxation is beneficial to employee recovery because the low sympathetic activation allows for the replenishment of energetic resources that were previously lost at work (Bennett et al., 2015). Research has found that relaxation during off-work hours is positively associated with work behavior the following day, such as engaging in organizational citizenship behavior (Rodríguez-Muñoz et al., 2020). Although various studies (Bennett et al., 2018; Chawla et al., 2020; Sonnentag et al., 2017) have emphasized the importance of relaxation for personal recovery outcomes, such as exhaustion, the findings regarding work-related

outcomes are mixed (Headrick et al., 2022). For example, Lloyd (2023) found that relaxation was not a significant predictor of engagement or exhaustion levels on Monday morning.

Therefore, I propose the following hypotheses about relaxation and recovery to further test the relationship.

*Hypothesis 2a: Engaging in relaxation experiences over the weekend will be positively associated with changes in engagement levels from Friday afternoon to Monday morning.*

*Hypothesis 2b: Engaging in recovery experiences over the weekend will be negatively associated with changes in exhaustion levels from Friday afternoon to Monday morning.*

### ***Mastery Experiences***

Mastery refers to experiences that happen outside of work that lead to growth, which can occur through challenges or learning opportunities (Bennett et al., 2018; Chawla et al., 2021; Sonnentag et al., 2022). Examples of mastery experiences can include playing an instrument or learning a new hobby (Bennett et al., 2015, Sonnentag & Fritz, 2007). These activities help recovery occur by distracting from the job, while also allowing an individual to exhibit competence and proficiency (Sonnentag & Fritz, 2007). These activities do require exertion, unlike other recovery experiences, however, they challenge an individual without over depletion of personal resources (Sonnentag & Fritz, 2007). However, mastery experiences do place additional demands on individuals because it requires more effort and energy than relaxing on the couch (Sonnentag & Fritz, 2007). Because mastery experiences can produce new resources, such as skills, self-efficacy, and competencies, recovery is argued to still occur despite additional demands being placed on the individual (Headrick et al., 2022; Sonnentag & Fritz, 2007). Research has shown that participating in mastery activities during leisure time can positively impact work engagement (Sonnentag et al, 2012). Additionally, engaging in evening mastery experiences during non-work time can help employees feel more capable of taking a proactive

role the next morning (Ouyang et al., 2019). Mastery experiences have also been found to help boost individual mood (Parkinson & Totterdell, 1999). Lloyd (2023) also found mastery experiences over the weekend to be a significant predictor of decreased levels of exhaustion on Monday morning. In the same study, mastery experiences over the weekend were also found to be a predictor of engagement levels on Monday morning (Lloyd, 2023). More specifically, individuals who engaged in more mastery experiences over the weekend were less exhausted and more engaged on Monday morning (Lloyd, 2023). Therefore, I propose the following hypotheses about mastery and recovery.

*Hypothesis 3a: Engaging in mastery experiences over the weekend will be positively associated with changes in engagement levels from Friday afternoon to Monday morning.*

*Hypothesis 3b: Engaging in mastery experiences over the weekend will be negatively associated with changes in exhaustion levels from Friday afternoon to Monday morning.*

### **Control**

Control refers to the feeling that one has power to choose how one's leisure time is spent (Headrick et al., 2022). Not only does control refer to an individual's capability to choose between two or more leisure activities, but it also refers to when the individual chooses to engage in the activity and how (Sonnentag & Fritz, 2007). According to Sonnentag & Fritz (2007), individuals have an innate desire to control what happens in their life. Because of this, personal control is related to positive reactions (Sonntag & Fritz, 2007). Increased feelings of control can prompt an individual to positively assess situations that may be stressful, which is correlated with lower distress and higher psychological well-being (Sonntag & Fritz, 2007). Alternatively, when individuals feel a lack of control over their leisure time activities, they are more likely to experience higher levels of psychological distress, which can lead to decreased self-worth, anxiety, and depression (Sonntag & Fritz, 2007). Overall, experiencing control

over non-work time and during leisure activities can fulfill an individual's need for autonomy due to an increase in self-efficacy and increased competence, which can lead to increased well-being (Bennett et al., 2015; Fritz et al., 2010; Sonnentag & Fritz, 2007). In this way, control can be viewed as a resource that aids recovery during non-work time. Additionally, Lloyd (2023) found control over the weekend to be a significant predictor of decreased exhaustion levels on Monday morning. The same study also found control over the weekend to be positively related to an increase in engagement on Monday morning (Lloyd, 2023). Therefore, I propose the following hypotheses about mastery and recovery.

*Hypothesis 4a: Engaging in control experiences over the weekend will be positively associated with changes in engagement levels from Friday afternoon to Monday morning.*

*Hypothesis 4b: Engaging in control experiences over the weekend will be negatively associated with changes in exhaustion levels from Friday afternoon to Monday morning.*

### **Individual Differences**

Although most individuals have the potential to benefit from recovery experiences, the relationship between recovery activities and the actual level of recovery may depend on individual differences. Ragsdale et al. (2016) suggested that the role of personality during the recovery process works similarly to the role it plays in the stress process. Popular stress models postulate that individuals have different reactions to stressful events based on their personality (Ragsdale et al., 2016). For example, the Big Five trait of neuroticism was found to be a moderator of the relationship between stressors and negative affect, such that affect was impacted more negatively by stressors in individuals with higher neuroticism compared to those exhibiting lower neuroticism (Joshani, 2022). Research suggests that a similar phenomenon may occur during recovery experiences, whereby personality influences the recovery process and

may even have a moderating effect on the relationship between recovery activities and recovery (Ragsdale et al., 2016).

The existing literature regarding recovery and individual differences mainly focuses on the role of the Big 5 Personality Traits on an individual's ability to recover. For example, research indicates that high levels of neuroticism may lead to an increased need for recovery in individuals as well as render them susceptible to various work-related factors (Fostervold & Watten, 2022). Openness has been found to have a positive relationship with the need to recover. High levels of openness are associated with negative work-related consequences (Fostervold & Watten, 2022). Sonnentag & Fritz (2007) indicated that openness to experience and extraversion both had a positive relationship with mastery experiences. Additionally, emotional stability had a positive association with psychological detachment, mastery, and control (Sonnentag & Fritz, 2007). These positive correlations indicate that personality traits have an impact on individuals' need for recovery and their engagement in recovery experiences.

In addition to research on the Big 5, there have been several studies conducted on workaholism as a moderator of the relationship between recovery and work-related outcomes, such as exhaustion and engagement. Molino et al. (2018) found a positive relationship between workaholism and exhaustion, which indicates that workaholism has a negative impact on well-being. The study also supported the relationship between recovery and decreased exhaustion and found workaholism as a moderator. This shows that recovery is less likely to lower exhaustion levels for individuals with higher workaholic tendencies (Molino et al., 2018). Similarly, Lloyd (2024) examined the effect of recovery over the weekend on exhaustion and engagement on Monday morning. She tested workaholism as a moderator and explored more in depth the impact of individual recovery experiences on exhaustion and engagement levels. She found that the

relationship between recovery and exhaustion was moderated by workaholism. The studies by Molino (2018) and Lloyd (2024) focused on the moderating effect of workaholism on the recovery process. However, other moderating variables may also play a role in the recovery process. Thus, given its influence on recovery, the current study will examine the moderating role of neuroticism on the relationship between weekend recovery activities and engagement and exhaustion levels on Monday morning.

### **Neuroticism**

Neuroticism, one of the Big 5 personality traits, has been defined as the stable tendency to experience increased negative affect and emotion (Widiger & Oltmanns, 2017). Individuals with high levels of neuroticism struggle to cope with environmental stress, view ordinary situations as threatening, and interpret minor frustrations as endlessly overwhelming (Widiger & Oltmanns, 2017). Additionally, people with higher levels of neuroticism can often be critical of themselves, do not receive criticism well from others, and do not feel good enough (Watson, Clark & Harkness, 1994). Neuroticism occurs on a spectrum, which means that people differ in how emotionally stable they are. For example, an individual exhibiting high emotional stability (low neuroticism) would be more likely to interpret a stressful situation less negatively or intensely. On the other hand, an individual exhibiting low emotional stability (high neuroticism) would be more likely to interpret stressful situations more negatively, as well as more frequently and intensely (Huang et al., 2014; Cho & Kim, 2022). Those high in neuroticism tend to set high goals for themselves while underestimating their own performance (Bakker et al., 2006). These individuals have also been characterized as employing poor coping skills, such as avoidance and emotion-focused coping, which can manifest as increased reactivity and a tendency to negatively interpret stressful situations (Fostervold & Watten, 2022). As a result, individuals with high neuroticism are more likely to interpret daily events as hassles, report higher levels of

exhaustion, and perceive their work as putting in high effort but not getting much reward (Fostervold & Watten, 2022). As a result, research suggests that individuals high in neuroticism frequently report decreased job satisfaction (Fostervold & Watten, 2022). The tendency to experience increased negative affect, utilize poor coping strategies, experience increased stress reactions, and exhibit poor task performance may then lead to an increase in resource depletion and a greater need for recovery during non-work time due to greater efforts expended at work (Fostervold & Watten, 2022). In the existing research on this topic, the terms neuroticism and emotional stability are often used interchangeably. For the purposes of this study, both terms will be used to maintain consistency with previous literature and to ensure clarity in the discussion.

### *Neuroticism as a Moderator*

As previously stated, differences in personality allow individuals to react more or less emotionally to stressful situations. Because individuals with high levels of neuroticism are more likely to react emotionally to stressful situations, they are also more likely to be emotionally preoccupied, exhausted, and distracted, which can lead to poor work performance (Widiger & Oltmanns, 2017). Additionally, individuals who exhibit higher levels of neuroticism tend to report feeling lower levels of personal achievement (Bakker et al., 2006). The combination of these elements makes individuals more likely to develop burnout symptoms because they are less likely to be able to recover from stressful situations and regenerate resources that help combat emotional exhaustion. Additionally, neuroticism has been found to be a consistent predictor of burnout (Bakker et al., 2006). For example, a study of highway patrol officers indicated that neuroticism is a moderator of the relationship between daily hassles and burnout (Hills & Norvell, 1991). Specifically, officers with high neuroticism experienced more emotional exhaustion and burnout when faced with increased daily hassles than officers with low neuroticism (Hills & Norvell, 1991). Additionally, a study by Zuo et al., (2024) found that

neuroticism moderates the relationship between rumination and academic stress, indicating that for students higher in neuroticism, rumination was more likely to lead to academic burnout symptoms (Zuo et al., 2024). Moreover, personality traits influence how susceptible an individual is to developing burnout symptoms (Bakker et al., 2006). Research indicates that the relationship between stress and burnout symptoms depends on one's level of neuroticism, such individuals with high levels of neuroticism have more emotional reactions in response to stressful situations, in addition to a decreased ability to cope (Bakker et al., 2006). Using this evidence as a foundation, the objective of the present study is to investigate how the four weekend recovery experiences relate to levels of exhaustion and engagement on Monday morning with neuroticism serving as a moderator.

In terms of the relationship between psychological detachment over the weekend and engagement levels on Monday morning, I hypothesize that the relationship between psychological detachment over the weekend and engagement levels on Monday morning will be weaker for individuals higher in neuroticism. This relationship can be explained by the increased likelihood to ruminate about events that occurred during the workday and anticipate future stressful events (Sonnentag, 2012). As previously mentioned, neuroticism has been found to be a moderator to the relationship of rumination and stress (Zuo et al., 2024). Those higher in neuroticism are more likely to engage in rumination because of their stronger emotional reactions to stress (Haaland & Christiansen, 2002). As a result, these individuals may engage in more work-related rumination over the weekend, leaving them with the inability to psychologically detach. Additionally, because individuals higher in neuroticism have the tendency to avoid stressful events, they may be less engaged at work (Vachhrajani et al., 2022).

*Hypothesis 5a: Neuroticism moderates the positive relationship between psychological detachment and change in engagement over the weekend, such that the relationship is weaker for people higher in neuroticism.*

Additionally, research depicts neuroticism as a moderator of the stressor-strain relationship. For example, a study by Joshanloo (2022) showed that neuroticism impacted the relationship between stressors and negative affect. Individuals higher in neuroticism were more negatively impacted by stressors than individuals with lower neuroticism levels (Joshanloo, 2022). Additionally, neuroticism was found to be a moderator of the relationship between workaholism and vital exhaustion, finding that teachers higher in neuroticism were more likely to push themselves beyond their work capability, which resulted in higher vital exhaustion (Wettstein et al., 2022). As a result, I hypothesize that the relationship between psychological detachment over the weekend and exhaustion levels on Monday morning depends on an individual's level of neuroticism.

*Hypothesis 5b: Neuroticism moderates the negative relationship between psychological detachment over the weekend and changes in reported exhaustion over the weekend, such that the relationship is stronger for those higher in neuroticism.*

Some research does exist on how individuals high in neuroticism have increased high negative activation, which can lead to poor sleep (Sonnentag, 2018). However, there is a lack of research on the relationship between relaxation and neuroticism. Due to the lack of research, I want to explore whether the relationship between relaxation and engagement levels on Monday morning depends on one's level of neuroticism. As a result, I hypothesize that the relationship between relaxation over the weekend and engagement depends on neuroticism, such that the relationship is weaker for people with higher levels of neuroticism. This argumentation is due to

increased activation levels that occur as a response to increased stress that individuals with neuroticism experience. High negative activation levels make it harder for these individuals to relax over the weekend. Poorer recovery should then result in fewer resources for work on Monday and therefore less engagement at work.

*Hypothesis 6a: Neuroticism moderates the positive relationship between relaxation recovery experiences over the weekend and changes in engagement levels over the weekend, such that the relationship is weaker for people higher in neuroticism.*

Additionally, a lack of relaxation over the weekend will lead to higher exhaustion for individuals higher in neuroticism because of their decreased ability to relax.

*Hypothesis 6b: Neuroticism moderates the negative relationship between relaxation recovery experiences over the weekend and changes in exhaustion levels over the weekend, such that the relationship is weaker for people higher in neuroticism.*

Similarly, a lack of research exists on the relationship between neuroticism and mastery experiences. However, Sonnentag and Fritz (2007) proposed that emotional stability and mastery experiences would be positively related because emotionally stable individuals approach their lives more positively and should be more inclined to embrace and engage in challenges during non-work time. Because individuals with higher emotional stability tolerate stressful situations better than individuals with low emotional stability, they are more likely to be able to meet the demanding essence of mastery experience activities (Sonnentag & Fritz, 2007). As a result, I propose that that the relationship between mastery experiences over the weekend and engagement depends on neuroticism, such that the relationship is weaker for people with higher levels of neuroticism.

*Hypothesis 7a: Neuroticism moderates the positive relationship between mastery experiences over the weekend and changes in engagement levels over the weekend, such that the relationship is weaker for people higher in neuroticism.*

Because I am proposing that individuals higher in neuroticism are less likely to engage in mastery experiences over the weekend, I predict that these individuals will also have higher exhaustion levels on Monday morning.

*Hypothesis 7b: Neuroticism moderates the negative relationship between mastery experiences and changes in exhaustion levels over the weekend, such that the relationship is weaker for people higher in neuroticism.*

A lack of research also exists on the relationship between neuroticism and control experiences. Sonnentag and Fritz (2007) proposed that emotional stability is positively related to control during non-work time. Not only do individuals experience stressors from work, but they can also experience stressors during non-work time and in the family domain (Sonnentag & Fritz, 2007). Individuals with lower neuroticism might find it easier to deal with these additional stressors and experience more control than those with higher neuroticism because of their increased ability to adjust to these outside stressful events, which is imperative to regulate reactions to stress (Costa & McCrae, 1992; Sonnentag & Fritz, 2007). As a result, I propose that the relationship between control over the weekend and engagement levels on Monday morning depends on an individual's level of neuroticism.

*Hypothesis 8a: Neuroticism moderates the positive relationship between control experiences over the weekend and changes in engagement levels over the weekend, such that the relationship is weaker for people higher in neuroticism.*

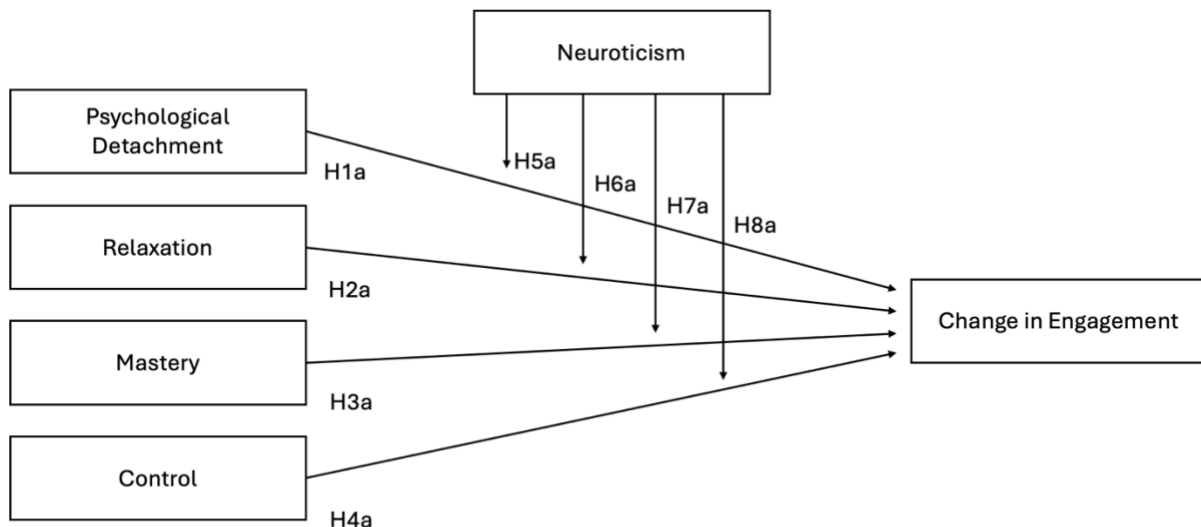
Lastly, I argue that neuroticism could be a moderator of the relationship between control and exhaustion because of the additional stressors individuals may experience outside of work, such as family demands and obligations (Sonnentag & Fritz, 2007). Those higher in neuroticism will find it harder adjust to such events (Costa & McCrae, 1992; Sonnentag & Fritz, 2007), which may lead them to feel like they have less control over their non-work time. As a result, I propose that the relationship between control over the weekend and exhaustion levels on Monday morning depends on an individual’s level of neuroticism.

*Hypothesis 8b: Neuroticism moderates the negative relationship between control experiences over the weekend and exhaustion levels on Monday morning, such that the relationship is stronger for people higher in neuroticism.*

Each of the hypothesized relationships is present below in Figures 1 and 2.

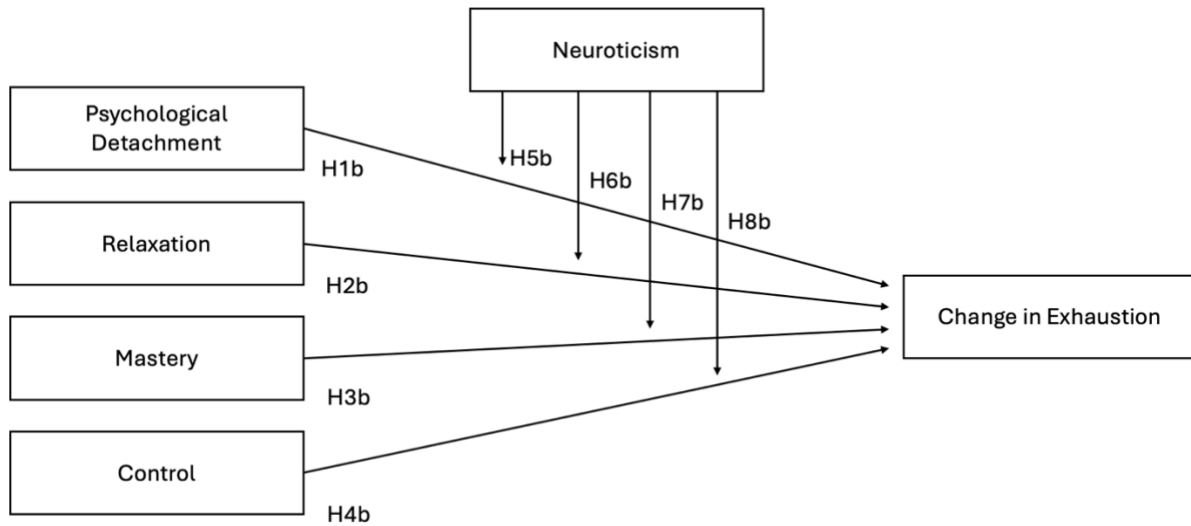
**Figure 1**

*Engagement Hypotheses*



**Figure 2**

*Exhaustion Hypotheses*



**Table 1**

*Survey Content & Timing*

Weekend 1		Weekend 2		Weekend 3	
Last day at work	First day back at work	Last day at work	First day back at work	Last day at work	First day back at work
MPQ	REQ	OLBI	REQ	OLBI	REQ
OLBI	OLBI	UWES	OLBI	UWES	OLBI
UWES	UWES		UWES		UWES

## Study 1 (Prolific)

### Method

#### *Participants*

Because this study is replicating and extending the findings from Lloyd (2024), I relied on the power analysis she conducted. The *a priori* power analysis with G\*Power determined the sample size should include at least 218 participants. Participants were nurses who were recruited via Prolific. Participants were required to be at least 18 years or older, work in the United States, and be fluent in English to participate. Four attention checks were used to exclude participants who were not completing the survey to the best of their ability. Participants who failed more than two attention checks were removed. As a result, three participants were removed for failing two attention checks and three duplicate entries were removed. Usable data were collected from 167 participants. Two surveys were administered to measure change in engagement and exhaustion levels over the weekend. The first survey was administered on Friday afternoon, and the second survey was administered on Monday morning. Participants were compensated \$3.00 for completing each survey, with an additional \$1.00 bonus for completing both, for a total possible compensation of \$7.00. Participants ranged in age from 20 to 85 years, with a mean age of 41.9 years ( $SD = 11.9$ ). The majority of respondents were female (81.1%), while 17.7% were male. In terms of racial demographics, 56.7% identified as Caucasian, and 24.4% identified as Black. Participants also provided information about their professional certifications, with the majority (61.6%) identifying as registered nurses, 12.2% as licensed practical nurses (LPNs), and the remainder holding various other nursing certifications. Additionally, 67.5% of respondents reported having children, with most indicating that their children were either school-aged (28.1%) or teenagers (29.7%)

## **Materials**

For the purposes of this study, recovery was operationalized in two ways: a decrease in exhaustion levels after the weekend and an increase in engagement levels after the weekend.

### ***Exhaustion***

The Oldenburg Burnout Inventory (OLBI) created by Demerouti et al. (2003) was used to measure work-related exhaustion. The test contains 16 items that ask participants to indicate the extent to which they agreed or disagreed with each statement using a four-point Likert scale that ranged from 1 (*Strongly Agree*) to 4 (*Strongly Disagree*). An example test item is “There are days when I feel tired before I arrive at work.” See Appendix A for the full scale. A high score on the test indicates high levels of exhaustion, while a low score indicates low levels of work-related exhaustion. The observed reliability of the scale on day 1 was  $\alpha = .81$ , while the observed reliability of the scale on day 2 was  $\alpha = .79$ .

### ***Engagement***

The Utrecht Work Engagement Scale (UWES) created by Schaufeli & Bakker (2004) was designed to assess engagement and was therefore used to measure engagement levels in this study. The UWES contains 17 items and utilizes three subscales to measure engagement, which are vigor (6 items), dedication (5 items), and absorption (6 items). Participants were asked to indicate how often they experience each statement on a Likert scale that ranged from 0 (*Never*) to 6 (*Everyday/Always*). An example item states, “Time flies when I am working.” See Appendix A for the full scale. A high score on the test indicates a high level of work engagement, while a low score represents a low level of work engagement. The observed reliability of the scale on day 1 was  $\alpha = .90$ , while the observed reliability of the scale on day 2 was  $\alpha = .91$ .

### ***Recovery Experiences***

The Recovery Experiences Questionnaire (REQ) was created by Sonnentag and Fritz (2007) to measure recovery experiences. The REQ consists of four subscales, one for each recovery experience (psychological detachment, relaxation, mastery, and control). Each subscale contains four items, totaling 16 items in the measure. For the purposes of this study, an adapted version of the REQ (Ginoux, Isoard-Gauthier, Sarrazin, 2020) was used to better represent recovery over the weekend. Participants were instructed to rate the extent that the activities they engaged in over the weekend allowed them to feel recovered, using a 7-point Likert scale that ranges from 1 (*Totally disagree*) to 7 (*Totally agree*). See Appendix A for the full scale. A high score on the test indicates that an individual engaged in a higher amount of recovery experiences over the weekend, while a low score indicates lower engagement in recovery experiences.

Psychological detachment was measured using 4 items from the REQ. An example of an item on the psychological detachment subscale is “To what extent would you say that the activities you did this weekend allowed you to forget about work?” This study observed an alpha of 0.91, which is consistent with the historical alpha of .90.

Relaxation was measured using 4 items. A sample item for the relaxation subscale states, “To what extent would you say that the activities you did this weekend allowed you to kick back and relax?” The historical alpha for this scale was .90 and the observed reliability in this study was 0.94.

Mastery was measured using 4 items. An example item for mastery experiences states, “To what extent would you say that the activities you did this weekend allowed you to learn new things?” The historical alpha for this scale was .72 and the observed reliability in this study was 0.91.

Control was measured using 4 items. A sample item for the control subscale states, “To what extent would you say that the activities you did this weekend allowed you to feel like I can decide for myself what to do?” The historical alpha for this scale was .88 and the observed reliability in this study was 0.93.

### *Neuroticism*

To measure neuroticism, the Multidimensional Personality Questionnaire (MPQ; Tellegen, 1995/2003) was used. This scale measures Stress Reaction, which is similar to the emotional instability scale in the IPIP measure. Stress Reaction represents the extent to which an individual tends to be nervous, sensitive, and worried (Patrick & Kramer, 2017). This measure was selected over traditional neuroticism scales because it more closely matches the context of stress and the rationale that was built in the literature review. Individuals higher in neuroticism should be more likely to experience stress reactions, due to their tendency to be more nervous and have stronger emotional reactions (Widiger & Oltmanns, 2017), which this scale measures. The scale contains 5 positively keyed items and 5 negatively keyed items, totaling 10 items. An example positively keyed item from the MPQ states “Have frequent mood swings,” while a negatively keyed item states “Am not easily bothered by things.” See Appendix A for the full scale. A high score on this test represents an individual whose moods change quickly, is more likely to experience worry and anxiety, is irritable and gets upset easily, can feel unhappy or depressed for no reason, and experiences feelings of guilt and inadequacy (Tellegen & Waller, 2008). On the other hand, a low score represents someone who can easily forget about fears and worries; gets over distressing situations; does not experience emotional unrest, agitation, feelings of guilt and inadequacy, or vulnerability (Tellegen & Waller, 2008). The observed reliability of the scale was  $\alpha = .88$ .

## **Procedures**

This study was part of a larger study. Two Qualtrics surveys measuring work stress, personality, off-job thinking, recovery activities, depression, coping strategies, engagement and exhaustion was created and the link to the survey was administered to participants via Prolific. The first survey was administered on a Friday afternoon, and the second was administered the following Monday morning. Each survey took approximately 15 minutes to complete. Once participants began the online survey, participants were informed of the purpose of the study, provided an informed consent form, and given a description of the survey procedures. Participants were also asked to provide a unique identifier, enabling researchers to link responses across time points, while also ensuring participant anonymity. Participants then completed the survey, which included the MPQ, the Oldenburg Burnout Inventory, the Utrecht Work Engagement Scale, the Recovery Experiences Questionnaire, and demographic questions. The MPQ was only administered once, on the Friday survey administration, while the REQ was only administered on Monday morning.

## **Results**

This study examined how employee exhaustion and engagement levels change over the weekend. It focused on weekend recovery experiences and neuroticism as predictors. To this end, my hypotheses stated that weekend recovery experiences and neuroticism would interact to predict changes in exhaustion and engagement over the weekend. They were tested using two general models with changes in exhaustion and engagement as the dependent variable in each model. The models were tested using Jamovi. Both models are displayed below, with Table 2 displaying the means, standard deviations, and intercorrelations for each variable.

Prior to testing the hypothesized models, the correlations were examined. The results show that there was not a significant relationship between any of the recovery experiences (detachment, relaxation, mastery, and control) and changes in engagement levels. Additionally, there was no significant relationship found between neuroticism and changes in engagement levels over the weekend.

The results also showed that there was not a significant relationship between any of the recovery experiences (detachment, relaxation, mastery, and control) and changes in exhaustion levels. Additionally, there was no significant relationship found between neuroticism and changes in exhaustion levels over the weekend.

**Table 2**

*Means, standard deviations, and intercorrelations for all scales*

	M	SD	1	2	3	4	5	6
1. REQ- Detachment	4.86	.54						
2. REQ- Relaxation	5.33	.35	.74*					
3. REQ- Mastery	4.28	.42	.06	.27*				
4. REQ- Control	5.55	.26	.50*	.75*	.25*			
5. Neuroticism	2.70	.79	-.05	-.22	-.13	.15		
6. Change in Engagement	.10	.47	.18	.04	.01	.05	.17	
7. Change in Exhaustion	.02	.32	.02	.03	-.06	.01	.08	0.14

### **Changes in Engagement Levels from Friday Afternoon to Monday Morning**

To examine the effects of weekend recovery experiences, neuroticism, and their interactions on changes in engagement, a regression analysis was conducted using the general linear model function in GAMLj package in Jamovi (Gallucci, 2019). Hypotheses 1a, 2a, 3a, and 4a predicted main effects of recovery experiences on changes in engagement. Table 3 displays the main effects for the engagement model. The overall model was not statistically significant ( $F(9, 107) = 1.82, p = .073$ ) and only explained 6% of the variance in changes in engagement

over the weekend. The results indicated that detachment was the only recovery activity that was a uniquely significant predictor of a change in engagement over the weekend ( $F(1, 107) = 4.40$ ,  $p = .038$ ). As can be seen in Table 3, the other three recovery experiences were not uniquely significant predictors of changes on engagement levels. While detachment was significant, the overall model was not significant. Therefore, hypotheses 1a-4a were not supported. Table 3 also shows the effects of the interactions on changes in engagement. No significant interactions were observed. As a result, hypotheses 5a, 6a, 7a, and 8a were not supported.

**Table 3**  
*Main and interaction effects – Engagement Model*

Predictor	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	<.01	0.02	2.40	.02
REQ - Detachment	.31	0.04	2.10	.04
REQ - Relaxation	-.10	0.07	-0.50	.62
REQ - Mastery	.10	0.03	1.03	.31
REQ - Control	-.13	0.05	-0.87	.39
Neuroticism	.14	0.06	1.38	.17
REQ – Detachment * Neuroticism	.14	0.05	1.07	.29
REQ – Relaxation * Neuroticism	-.02	0.08	-0.11	.91
REQ – Mastery * Neuroticism	.10	0.04	1.06	.29
REQ – Control* Neuroticism	-.21	0.07	-1.40	.17

### **Changes in Exhaustion Levels from Friday Afternoon to Monday Morning**

To examine the effects of weekend recovery experiences, neuroticism, and their interactions on changes in exhaustion, a regression analysis was conducted using the general linear model function in GAMLj package in Jamovi (Gallucci, 2019). Hypotheses 1a, 2a, 3a, and 4a predicted main effects of recovery experiences on changes in exhaustion.

Table 4 displays the main effects for the exhaustion model. The overall model was not significant ( $F(9, 108) = 0.378$ ,  $p = .944$ ) and only explained 3% of the variance in changes in exhaustion over the weekend. As can be seen in Table 4, none of the recovery activities were

uniquely significant predictors of changes in exhaustion over the weekend. Therefore, hypotheses 1b-4b were not supported. Further, there was not a significant interaction between any of the recovery experiences and neuroticism on changes in exhaustion. Due to these results, hypotheses 5b-8b were not supported.

**Table 4**  
*Main and interaction effects – Exhaustion model*

Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	<0.01	0.03	0.16	0.87
REQ - Detachment	-0.04	0.03	-0.42	0.68
REQ - Relaxation	0.14	0.05	0.98	0.33
REQ - Mastery	0.01	0.02	-0.65	0.52
REQ - Control	-0.03	0.04	-0.62	0.54
Neuroticism	0.19	0.04	0.78	0.44
REQ – Detachment * Neuroticism	0.01	0.03	0.28	0.78
REQ – Relaxation * Neuroticism	-0.03	0.06	-0.54	0.59
REQ – Mastery * Neuroticism	-0.01	0.03	-0.40	0.70
REQ – Control* Neuroticism	<0.01	0.05	0.07	0.95

### Exploratory Analyses

Because exhaustion and engagement levels showed practically no change between Friday and Monday, and this change was not statistically significant, an exploratory analysis was performed using only Monday morning engagement and exhaustion data. Specifically, I examined the effects of weekend recovery experiences, neuroticism, and their interactions on Monday morning engagement and Monday morning exhaustion levels. Prior to calculating the interaction terms, the predictors were mean centered in both models.

Prior to testing the hypothesized models, the correlations were examined. These are displayed in Table 5. As can be seen from the table, some of the recovery experiences, more specifically relaxation and detachment and mastery and relaxation, displayed a positive significant relationship. Additionally, the results revealed that control had a positive significant

relationship with the other three recovery experiences. Regarding the outcome variables, Monday morning exhaustion levels had a positive, significant relationship with neuroticism, while Monday morning engagement levels displayed a negative significant relationship with neuroticism. Furthermore, Monday morning exhaustion levels were negatively correlated with all recovery experiences. Last, relaxation showed a positive correlation with neuroticism.

**Table 5**  
*Intercorrelations for all scales*

	1	2	3	4	5	6
1. Engagement D2 Average						
2. REQ - Detachment	-.16					
3. REQ - Relaxation	.01	.74*				
4. REQ - Mastery	.27*	.06	.27*			
5. REQ - Control	.21*	.49*	.74*	.25*		
6. Neuroticism	-.23*	-.05	-.22*	-.13	-.15	
7. Exhaustion D2 Average	-.39*	-.13	-.25*	-.26*	-.27*	.45*

### ***Monday Morning Engagement***

Table 6 displays the results of the exploratory regression model predicting Monday morning engagement. The overall model was significant,  $F(9, 107) = 4.899, p < .001$ , explaining 29.2% of the variance in Monday morning engagement. The analysis revealed a significant main effect of neuroticism ( $\beta = -0.22, t(107) = -2.43, p = .017$ ), indicating that higher levels of neuroticism were associated with lower engagement on Monday morning. Control also had a significant main effect ( $\beta = 0.46, t(107) = 3.28, p = .001$ ) with higher control being associated with higher values of Monday morning engagement. While my hypotheses were specifically about changes in exhaustion and engagement, these results show that control and neuroticism do effect engagement levels on Monday morning. A significant interaction was found between

neuroticism and control ( $\beta = 0.28$ ,  $t(107) = 2.02$ ,  $p = .045$ ). Table 7 displays the simple effects for the interaction between neuroticism and control. Figure 3 displays the interaction plot. These findings suggest that the relationship between control and Monday morning engagement is positive and stronger for people with higher levels of neuroticism and the relationship is not significant for people with lower levels of neuroticism.

**Table 6**  
*Main and interaction effects – Monday Morning Engagement*

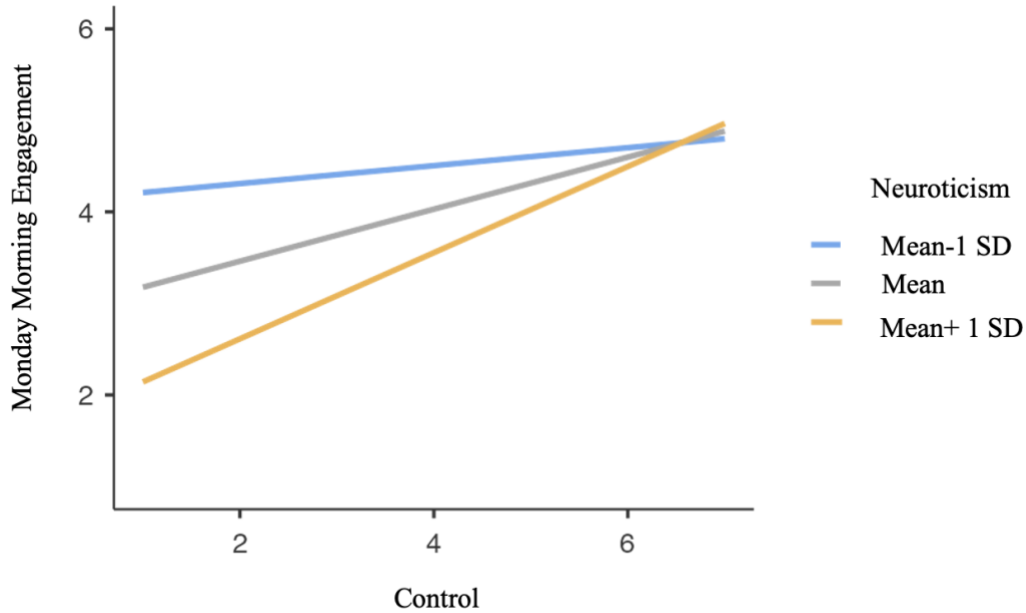
Predictor	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	2.89	0.48	5.98	<.001
REQ - Detachment	-0.19	0.07	-1.44	.15
REQ - Relaxation	-0.21	0.11	-1.11	.27
REQ - Mastery	0.18	0.05	1.96	.05
REQ - Control	0.43	0.09	3.28	.001
Neuroticism	-0.22	0.61	-2.43	.01
REQ – Detachment * Neuroticism	0.04	0.07	0.37	.71
REQ – Relaxation * Neuroticism	-0.27	0.13	-1.49	.14
REQ – Mastery * Neuroticism	-0.17	0.06	-1.92	.06
REQ – Control* Neuroticism	0.28	0.11	2.02	.05

**Table 7**  
*Simple effects of control*

Moderator levels						
Neuroticism	Estimate	<i>SE</i>	$\beta$	<i>df</i>	<i>t</i>	<i>p</i>
Mean- 1 - SD	0.09	0.14	0.15	107	0.71	.48
Mean	0.28	0.09	0.43	107	3.28	.001
Mean + 1-SD	0.47	0.11	0.70	107	4.15	< .001

**Figure 3**

*Moderation effect of neuroticism on control experiences and engagement*



***Monday Morning Exhaustion.***

Table 8 displays the results of the exploratory regression model predicting Monday morning exhaustion. The overall model was significant ( $F(9, 108) = 4.99, p < .001$ ), explaining 29.4% of the variance in Monday morning exhaustion. However, the results show that there were no significant unique relationships between the recovery experiences (detachment, relaxation, mastery, and control) and exhaustion levels on Monday morning. The analysis did reveal a significant main effect of neuroticism ( $\beta = 0.43, t(108) = 4.79, p < .001$ ), indicating that higher levels of neuroticism were positively associated with Monday morning exhaustion. Additionally, none of the interaction effects were significant.

**Table 8***Main and interaction effects – Monday Morning Exhaustion*

Predictor	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	2.48	0.04	62.93	<.001
REQ - Detachment	-0.06	0.04	-0.41	.68
REQ - Relaxation	0.05	0.06	0.28	.78
REQ - Mastery	-0.17	0.03	-1.86	.07
REQ - Control	-0.19	0.05	-1.53	.13
Neuroticism	0.43	0.05	4.79	<.001
REQ – Detachment * Neuroticism	0.03	0.04	0.27	.78
REQ – Relaxation * Neuroticism	0.01	0.07	0.08	.93
REQ – Mastery * Neuroticism	0.09	0.03	1.11	.27
REQ – Control* Neuroticism	0.05	0.06	0.40	.69

### Discussion

The initial analyses showed null effects for all hypotheses. However, a closer examination of the data revealed no significant change in exhaustion or engagement levels from Friday afternoon to Monday morning. Therefore, there was likely not enough variability in the outcomes (changes in exhaustion and changes in engagement). Thus, none of the recovery experiences were significant predictors of change in engagement or exhaustion levels over the weekend. The findings also indicated that there was no significant relationship found between neuroticism and changes in exhaustion levels over the weekend. Results showed that there was not a significant interaction between any of the recovery experiences and neuroticism on changes in exhaustion.

One possible explanation for these non-significant findings is the use of one weekend. Perhaps a longer study that utilizes multiple weekends would provide more valuable insights into the relationships between these variables. A single weekend may not be a long enough duration to observe changes in work-related exhaustion or engagement. Additionally, due to the Prolific

screening policies, a screening question was not used in the Prolific study to exclude any nurses who had scheduled work over the weekend. As a result, it is possible that participants could have worked over the weekend, which may explain a lack of change of exhaustion and engagement levels between Friday afternoons and Monday mornings.

When conducting the exploratory analysis, control was found to have significant interactions with neuroticism to predict engagement on Monday mornings. These results may indicate that those who are higher in neuroticism and engaged in more control activities over the weekend, may be more engaged on Monday morning. Additionally, neuroticism was found to be a uniquely significant predictor of engagement and exhaustion levels on Monday morning. This means that differing levels of neuroticism may impact employee engagement and exhaustion levels on Monday morning. However, these results should be interpreted with caution.

## **Study 2**

Study 2 extended Study 1 in two ways. First, Study 2 used a time series design to collect participant data from multiple weekends. This method was used as an attempt to see if there was a significant change in engagement and exhaustion over multiple weekends. Second, a screening question was utilized in the study to exclude nurses who had scheduled work over the weekend, the presence of which may have contributed to the non-significant results in Study 1, as they may not have been able to engage in recovery activities.

### **Method**

#### ***Participants***

Participants were ambulatory oncology nurses who worked in outpatient offices and worked a more traditional workweek (Monday-Friday). Participants were required to be at least

18 years or older, work at least 29 hours a week, be fluent in English, and not have scheduled work over the weekend to participate. An initial sample of 41 nurses was recruited from the Oncology Department at Vanderbilt Medical Center, from the 173 that were contacted. The data were cleaned to remove participants who failed attention checks and to remove duplicate entries. For the analysis, participants with identifiers differing by one character were merged, for example, Gana and gana. This process resulted in a final sample of 14 nurses based on cluster criteria, out of the initial 41 nurses. This was because neuroticism was only measured on the first day. So, if people missed the first day but participated in the other days, they would have been excluded from the analyses. Six surveys were administered over the course of three weekends, on Friday afternoons and on Monday mornings. At the end of each survey, participants were asked if they would like to be entered into a drawing to win one of two \$25 gift cards for each day that data were gathered. To incentivize participation across all six days, an additional drawing to win one of three \$50 gift cards was used. Participants would receive one entry for each day they completed, and if they completed all six days, they received six bonus entries (12 total entries). Participants ranged in age from 26 to 62 years, with a mean age of 41.2 years, with a standard deviation of 11.9. The majority of respondents were female (94.7%), while 5.3% were male. In terms of racial demographics, the majority of respondents (89.5%) identified as Caucasian. Participants also provided information about their professional certifications, with the majority (94.7%) identifying as registered nurses, while 5.3% held BSNs. Additionally, 63.2% of respondents reported having children, with most indicating that their children were teenagers. Participants also averaged 40.39 work hours week.

## **Material and Procedure**

This study used the same materials that were used in Study 1. The data for this study was collected as part of a larger study focused on the well-being of nurses. Six Qualtrics surveys measuring work stress, personality, off-job thinking, depression, coping strategies, recovery activities, engagement, and exhaustion were created and the links to the surveys were administered to participants. The surveys were sent via email on Friday afternoons at 12 PM and were also administered on Monday morning at 6 AM. The survey took approximately 15 minutes to complete. Once participants began the online survey, they were informed of the purpose of the study, provided an informed consent form, and given a description of the survey procedures. Participants then completed the survey, which included demographic questions, the Oldenburg Burnout Inventory, the Utrecht Work Engagement Scale, the Recovery Experiences Questionnaire, and the MPQ. Participants were then debriefed at the end of the study and had the option to enter their names into a drawing for electronic gift cards as a form of compensation. In order to link participant data to the drawings, participants were also asked to provide a unique identifier, enabling researchers to link responses across time points, while also ensuring participant anonymity and their number of entries was recorded. Drawings were done at the end of data collection and distributed at that time.

## **Results**

The two primary goals of this study were to examine the impact of recovery experiences on changes in employee engagement and exhaustion over the weekend and to investigate whether neuroticism moderates the relationship between recovery activities and exhaustion and engagement. As a result, I hypothesized that weekend recovery experiences and neuroticism

would predict changes in engagement and exhaustion levels from Friday afternoons to Monday mornings.

Two separate linear mixed models were used to test the hypotheses using the lme4 package in R (Bates et al., 2015), with engagement and exhaustion as the outcome variables and neuroticism and each recovery activity as the predictors. In each model, neuroticism, the four recovery experiences, and their interactions were entered as fixed effects. The change in exhaustion and change in engagement variables were entered as the dependent variable in each model. All predictors were centered using mean centering. The R script is included in Appendix B.

As in Study 1, exploratory analyses were run using only the day two engagement and day two data exhaustion data, instead of the changes in these variables, as the respective outcomes. Neuroticism, the four recovery experiences, and their interactions were entered as fixed effects. All predictors were centered using mean centering. However, engagement and exhaustion day 2 levels were entered for each as the dependent variable instead of change. The R script is included in the Appendix B.

### **Changes in Engagement Levels over three weekends**

No significant main effects of recovery activities or neuroticism on changes in engagement levels emerged. Therefore, hypotheses 1a-4a were not supported. Additionally, no significant main interactions were found. Therefore, hypotheses 5a-8a were not supported. Table 9 shows the results of the linear mixed model. This suggests that engaging in these four recovery experiences did not predict changes in engagement levels over the weekend. Additionally, the results suggest that differing levels of neuroticism do not affect changes in engagement levels or interact with any of the recovery activities to predict changes in engagement levels.

**Table 9***Main and interaction effects –Engagement model*

Predictor	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	-0.90	0.21	-0.41	.68
REQ - Detachment	0.02	0.25	0.08	.93
REQ - Relaxation	0.01	0.16	0.04	.96
REQ - Mastery	-0.01	0.09	-0.11	.90
REQ - Control	-0.09	0.17	-0.58	.57
Neuroticism	0.06	0.17	0.39	.70
REQ – Detachment * Neuroticism	0.24	0.46	0.52	.60
REQ – Relaxation * Neuroticism	0.05	0.28	0.17	.86
REQ – Mastery * Neuroticism	-0.21	0.19	-0.15	.26
REQ – Control* Neuroticism	0.38	0.24	0.15	.87

**Exploratory Analysis – Monday Morning Engagement**

The main effects were examined in R using a linear mixed model. The results showed that mastery was the only recovery experience that was a uniquely significant predictor of engagement on Monday morning ( $\beta = 0.54$ ,  $SE = 0.17$ ,  $t = 3.13$ ,  $p < .01$ ). The other three recovery experiences did not have a significant effect. Further, none of the interactions in this model were significant. Table 10 displays the main and interaction effects for this analysis.

**Table 10***Main and interaction effects – Monday Morning Engagement*

Predictor	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	7.86	10.08	0.78	.44
REQ - Detachment	0.02	0.32	0.07	.93
REQ - Relaxation	-0.05	0.25	-0.21	.82
REQ - Mastery	0.54	0.17	3.13	.01
REQ - Control	0.59	1.98	0.29	.76
Neuroticism	1.08	4.77	0.22	.82
REQ – Detachment * Neuroticism	-0.27	0.46	-0.57	.57
REQ – Relaxation * Neuroticism	0.05	0.28	0.56	.57
REQ – Mastery * Neuroticism	0.13	0.35	-0.37	.71
REQ – Control* Neuroticism	0.59	1.05	0.56	.57

## Changes in Exhaustion Levels over three weekends

Hypotheses 1b, 2b, 3b, and 4b predicted the main effects of recovery experiences on changes on exhaustion. Table 11 displays the results for the exhaustion model. None of the recovery activities were uniquely significant predictors of changes in exhaustion over the weekend. Therefore, hypotheses 1b-4b were not supported. The results also showed that there was not a significant interaction between any of the recovery experiences and neuroticism on changes in exhaustion. Due to these results, hypotheses 5b-8b were not supported.

**Table 11**  
*Main and interaction effects –Exhaustion model*

Predictor	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	1.26	0.99	1.27	.65
REQ - Detachment	-0.43	0.71	-0.61	.84
REQ - Relaxation	-0.07	0.47	-0.01	.38
REQ - Mastery	-0.01	0.29	-0.05	.74
REQ - Control	0.25	0.40	0.64	.69
Neuroticism	-0.50	0.37	-1.35	.94
REQ – Detachment * Neuroticism	0.16	0.23	0.72	.53
REQ – Relaxation * Neuroticism	-0.03	0.15	-0.18	.81
REQ – Mastery * Neuroticism	0.01	0.11	0.11	.61
REQ – Control* Neuroticism	-0.06	0.12	-0.47	.96

*Note:* \*  $p < .05$ .

## Exploratory Analysis - Exhaustion

None of the recovery experiences were uniquely significant predictors of exhaustion on Monday morning. The results showed that there was not a significant interaction between any of the recovery experiences and neuroticism on changes in exhaustion. Table 12 displays the main and interaction effects for this analysis.

**Table 12**  
*Main and interaction effects –Monday Morning Exhaustion*

Predictor	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	2.21	0.13	17.40	<.001
REQ - Detachment	0.02	0.15	0.14	.89
REQ - Relaxation	-0.18	0.12	-0.15	.88
REQ - Mastery	-0.19	0.06	-2.78	.01
REQ - Control	0.26	0.10	0.25	.80
Neuroticism	0.31	0.15	2.06	.07
REQ – Detachment * Neuroticism	0.16	0.28	0.58	.57
REQ – Relaxation * Neuroticism	-0.03	0.15	-0.18	.30
REQ – Mastery * Neuroticism	-0.01	0.14	-0.04	.93
REQ – Control* Neuroticism	-0.07	0.18	-0.04	.96

*Note: \* p < .05.*

## Discussion

Study 2 was conducted to improve upon Study 1 by extending data collection and measuring changes in exhaustion and engagement levels over multiple weekends, as well as to screen out participants who had scheduled work over the weekend. Despite these changes, the results of this study still did not show any significant change in exhaustion or engagement levels from Friday afternoon to Monday morning. Additionally, none of the hypotheses were supported, meaning that none of the recovery experiences were significant predictors of change in engagement and exhaustion levels over the weekend. The findings also indicated that there was no significant relationship found between neuroticism and changes in exhaustion levels over the weekend. Results showed that there was not a significant interaction between any of the recovery experiences and neuroticism on changes in exhaustion. The results of the exploratory analysis in study 2 were slightly different from the study 1. In the first study, control had a significant interaction with neuroticism to predict Monday morning engagement, while in study 2 mastery had a significant interaction with neuroticism to predict Monday morning engagement.

Additionally, the results of study 1 found neuroticism to be a uniquely significant predictor of engagement and exhaustion levels on Monday morning. This relationship did not occur in study 2.

### **General Discussion**

These two studies examined the impact of recovery experiences on changes in employee engagement and exhaustion over the weekend. Additionally, the studies replicated the research of Molino et al. and Lloyd et al., which examined workaholism as a moderator on the relationship between recovery activities and engagement and exhaustion. Instead of workaholism, we examined neuroticism as moderator. The results of both Study 1 and Study 2 did not support any of the hypotheses that were proposed. These findings were surprising, as they were not consistent with the findings from the Lloyd et al. study, which found mastery and control experiences to be negatively correlated with exhaustion levels on Monday morning and positively correlated with engagement levels on Monday morning. Similarly, the results of the exploratory analyses were not consistent with the Lloyd et al. study, as none of the recovery experiences were significantly correlated with the outcome variables. However, mastery and control both had significant interactions with neuroticism, which was consistent with the findings from the Lloyd et al. study. These results suggest that while neuroticism may have a role in weekend recovery, the relationship is not as straightforward as previously thought. Additionally, the present study utilized a sample of nurses, whereas the Lloyd et al. study did not. Given the high-stress and demanding nature of nursing, recovery experiences may function differently for this population, potentially explaining the inconsistencies.

## **Implications**

This study provides practical implications for both employees and organizations. Although the results of the study were not significant, the exploratory analyses provided some insight into two recovery experiences that could be most beneficial for employees trying to recover over the weekend: mastery and control. Mastery was a significant predictor of engagement levels on Monday morning in Study 2 and showed a significant interaction effect with neuroticism. These findings suggest that engaging in mastery experiences over the weekend has a positive effect on Monday morning engagement levels, especially for those higher in neuroticism. As a result, employees should make a conscious effort to integrate mastery experiences, such as learning a new language or playing an instrument, into their weekend plans to facilitate better recovery and be more engaged on Monday morning.

Additionally, the exploratory results of Study 1 indicated that engaging in control experiences over the weekend was a uniquely significant predictor of Monday morning engagement. This means that those who engaged in more control experiences over the weekend tended to be more engaged on Monday morning. These results imply that employees should prioritize control activities to facilitate better recovery over the weekend. To do so, employees should engage in recovery activities of their choosing that create a sense of autonomy for the individual. This could include picking what kind of exercise to engage in after work or choosing whether to read a book or watch TV to unwind at night.

Furthermore, these findings have implications for organizations. Employers could encourage employees to engage in mastery and control experiences during their non-work time to promote increased engagement at work. To promote mastery experiences, organizations could offer activities such as personal development opportunities or different hobby groups. The

availability of these activities could increase engagement in mastery experiences, as employees are increasing personal growth and well-being. Additionally, organizations should also emphasize the importance of engaging in control activities over the weekend. This may be in the form of promoting a more stable work life balance so that employees have the time to choose what activities they want to engage in after work. This could include not contacting employees about work over the weekend.

The results of the exploratory analyses also provide insight into which recovery experiences impact the Monday morning engagement levels of those higher in neuroticism. The studies indicate that mastery and control may have the most impact on Monday morning engagement levels. Therefore, it may be beneficial for individuals higher in neuroticism to engage in mastery and control activities for optimal recovery.

A key theoretical implication of this study is the way that recovery was operationalized. Based on the Molino et al. (2018) and Lloyd et al. (2024) studies, this study operationalized recovery as an increase in engagement and a decrease in exhaustion. While this is in line with the existing literature, it may not have been the optimal way to operationalize recovery, considering the use of nurses for the sample. As previously mentioned, the healthcare field and nurses are faced with unique challenges that other professions do not experience. Nursing can be a high-stakes job that often involves critical and life or death situations. As such, nurses are required to be on alert and fully engaged during their shift, regardless of how recovered they feel. Future studies should explore other ways to define and operationalize recovery in lieu of engagement and exhaustion or in combination with the two, such as psychological well-being or burnout.

## **Limitations and Future Directions**

One limitation of the current studies is the small sample sizes. Although Study 2 sought to improve upon Study 1, the decreased sample size was a limitation. Due to the small number of participants, the results of this study may not be generalizable to the population because of the limited statistical power of the analysis. It is likely study 2 was severely underpowered to detect any effects. Another potential limitation is that our Prolific study did not ask whether nurses worked on the weekend, so they may not have had the opportunity to recover. It is possible that participants did have scheduled work over the weekend, therefore, there might be no change in engagement or exhaustion. Another potential limitation of this study is the sample of nurses. As nursing can be a demanding job that requires extended hours and can lead to high levels of burnout, it is possible that nurses do not recover over the weekend as well as other individuals. For example, nurses may not be able to detach, achieve sufficient rest, or engage in specific recovery activities over the weekend due to the mental demands of their job as well as individuals from other professions can (Gifkins et al., 2020). These challenges could have influenced the findings and explain why engaging in recovery activities over the weekend did not influence a change in engagement or exhaustion.

Future studies should improve upon this study design by recruiting more participants to reach the sample size needed. Future research could also recruit a more diverse sample of participants from a variety of different jobs and industries. Using participants who have varying job demands could provide an insight into how certain populations experience recovery over the weekend differently.

## **Conclusion**

Overall, this study investigated the relationships between the recovery experiences that nurses have over the weekend and the changes in their exhaustion and engagement levels from Friday afternoon to Monday morning. However, the results did not provide evidence that engaging in recovery experiences over the weekend increased engagement or decreased exhaustion. Therefore, more research is needed to fully understand the relationships between these variables.

Additionally, the current study examined how the personality trait of neuroticism may impact how well employees are able to recover over the weekend from work demands. To do this, we assessed neuroticism in participants to determine whether changes in engagement and exhaustion might be impacted by having high or low neuroticism. However, the results showed that neuroticism did not impact the strength of the relationship between recovery experiences and changes in engagement or exhaustion. On the other hand, the exploratory analyses revealed that neuroticism did interact with mastery and control experiences suggesting that these recovery activities may still play a role in how individuals with different personality traits experience recovery. While these interactions were not fully consistent with the original hypotheses, they indicate that neuroticism might influence the way individuals benefit from specific recovery strategies rather than overall changes in engagement or exhaustion.

Overall, these findings suggest that for nurses, recovery over the weekend may not directly translate to changes in engagement or exhaustion at the start of the workweek. Given the demanding nature of nursing, it is possible that other factors play a stronger role in determining how well nurses feel recovered. Future research should consider alternative measures of recovery that better capture the unique challenges of high-stress professions like nursing.

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## Appendix A

### The Oldenburg Burnout Inventory (OLBI; Demerouti et al., 2003)

Instruction: There are sixteen (16) statements below with which you may agree or disagree. Using the scale, please report the extent to which you agree or disagree with each of the statements.

#### Likert Scale

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

1. I always find new and interesting aspects in my work.
2. There are days when I feel tired before I arrive at work.
3. It happens more and more often that I talk about my work in a negative way.
4. After work, I tend to need more time in the past in order to relax and feel better.
5. I can tolerate the pressure of my work very well.
6. Lately, I tend to think less at work and do my job almost mechanically.
7. I find my work to be a positive challenge.
8. During my work, I often feel emotionally drained.
9. Over time, one can become disconnected from this type of work.
10. After working, I have enough energy for my leisure activity.
11. Sometimes I feel sickened by my work tasks.
12. After my work, I usually feel worn out and weary.
13. This is the only type of work that I can imagine myself.
14. Usually, I can manage the amount of my work well.
15. I feel more and more engaged in my work.
16. When I work, I usually feel energized.

## Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003)

Instruction: The following seventeen (17) statements are about how you feel at work/on the job. Please respond using the scale to describe the extent to which you relate to these Statements.

### Likert Scale

0. Never
1. A few times a year or less
2. Once a month or less
3. A few times a month
4. Once a week
5. A few times a week
6. Every day

1. At my work, I feel bursting with energy.
2. I find the work I do full of meaning and purpose.
3. Time flies when I'm working.
4. At my job, I feel strong and resilient.
5. I am enthusiastic about my job.
6. When I am working, I forget everything else around me.
7. My job inspires me.
8. When I get up in the morning, I feel like going to work.
9. I feel happy when I am working intensely.
10. I am proud on the work that I do.
11. I am immersed in my work.
12. I can continue working for very long periods at a time.
13. To me, my job is challenging.
14. I get carried away when I'm working.
15. At my job, I am very resilient, mentally.
16. It is difficult to detach myself from my job.
17. At my work I always persevere, even when things do not go well.

**The Recovery Experience Questionnaire (REQ; Sonnentag & Fritz, 2007; Ginoux, Isoard-Gauthier, Sarrazin, 2020)**

Instructions: Below you will be presented with sixteen (16) statements with which you may agree or disagree. Please respond using the scale to describe the extent to which you agree or disagree.

Likert Scale

1. Totally Disagree
2. Disagree
3. Somewhat Disagree
4. Neutral
5. Somewhat Agree
6. Agree
7. Totally agree

To what extent would you say that the activities you did this weekend allowed you to...

1. forget about work.
2. don't think about work at all.
3. distance myself from my work.
4. get a break from the demands of work.
5. kick back and relax.
6. do relaxing things.
7. use the time to relax.
8. take time for leisure.
9. learn new things.
10. seek out intellectual challenges.
11. do things that challenge me.
12. do something to broaden my horizons.
13. feel like I can decide for myself what to do.
14. decide my own schedule.
15. determine for myself how I will spend my time.
16. take care of things the way that I want them done.

## The Multidimensional Personality Questionnaire (MPQ; Tellegen, 1995/2003)

Instructions: For each statement, participants are asked to indicate the extent to which they believe the statement describes them. They should choose the response that best reflects their feelings or thoughts about themselves.

### Likert Scale

1. Strongly Disagree
2. Disagree
3. Neither Agree nor Disagree
4. Agree
5. Strongly Agree

1. Have frequent mood swings.
2. Get stressed out easily.
3. Worry about things.
4. Panic easily.
5. Am filled with doubts about things.
6. Seldom feel blue.
7. Am relaxed most of the time.
8. Am not easily bothered by things.
9. Feel comfortable with myself.
10. Don't worry about things that have already happened.

## Appendix B

From: "do-not-reply@cayuse.com" <do-not-reply@cayuse.com>  
Subject: [EXTERNAL] IRB-FY2025-37 - Modification: Modification Decision Letter  
Date: December 12, 2024 at 9:32:39 AM CST  
To: "Alexander T. Jackson" <Alexander.Jackson@mtsu.edu>, McKenzie Adams <mea4x@mtmail.mtsu.edu>, McKenzie Forsee <msf4g@mtmail.mtsu.edu>, Zeinab Mostafa <zm2x@mtmail.mtsu.edu>



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Date: December 12, 2024  
PI: Zeinab Mostafa  
Department: Middle Tennessee State University, Psychology  
Re: Modification - IRB-FY2025-37  
Nurse Recovery and Well-Being Study

The Middle Tennessee State University Institutional Review Board has reviewed the modification request to the above referenced study and rendered the decision below.

Decision: Approved  
Findings:  
Research Notes:

Sincerely,

*Middle Tennessee State University Institutional Review Board*

## Appendix C

### R script

```
#####
```

```
LOADING THE DATA AND THE LIBRARIES
```

```
#####
```

```
setwd("/Users/psychga/Desktop/Decision Aids Data")
```

You will need to change the file path or use point and click to set the working directory

```
myd<-read.csv("Forsee Long VUMC Data.csv") summary(myd) attach(myd)
```

```
library(nlme) library(lme4) library(MASS) library(boot) library(car) library(lattice)
library(ggplot2) library(multcomp) library(stringr) library(sjPlot) library(sjmisc)
library(lmerTest) library(simr)
```

### Centering your variables

```
myd<- myd %>% group_by(weekend) %>% mutate( NeuroticismD1.c = NeuroticismD1 -
mean(NeuroticismD1, na.rm = TRUE), rumination.c = rumination - mean(rumination, na.rm =
TRUE), rumination.c = rumination - mean(rumination, na.rm = TRUE), rumination.c =
rumination - mean(rumination, na.rm = TRUE), anticipation.c = anticipation - mean(anticipation,
na.rm = TRUE) ) %>% ungroup()
```

```
centered_means <- myd %>% group_by(weekend) %>% summarise( mean.neuroticism.c =
mean(NeuroticismD1.c, na.rm = TRUE), mean.rumination.c = mean(rumination.c, na.rm =
TRUE), mean.rumination.c = mean(rumination.c, na.rm = TRUE), mean.rumination.c =
mean(rumination.c, na.rm = TRUE), mean.anticipation.c = mean(anticipation.c, na.rm = TRUE),
) # Print centered means print(centered_means) summary(NeuroticismD1.c)
summary(NeuroticismD1.c) summary(NeuroticismD1.c) summary(NeuroticismD1.c)
summary(NeuroticismD1.c)
```

### Hypothesis Testing

```
summary(engagement.change) summary(exhaustion.change)
```

```
model1<-lmer(engagement.change~NeuroticismD1.c+detachment+relaxation+control+mastery+
NeuroticismD1detachment+ NeuroticismD1relaxation+ NeuroticismD1control+
NeuroticismD1mastery+weekend+(1|participant.number),data=myd) summary(model1)
```

```
model2<-lmer(exhaustion.change~NeuroticismD1+detachment+relaxation+control+mastery+  
NeuroticismD1detachment+ NeuroticismD1relaxation+ NeuroticismD1control+  
NeuroticismD1mastery+weekend+(1|participant.number),data=myd) summary(model2)
```

```
model3<-lmer(engagement.monday~NeuroticismD1+detachment+relaxation+control+mastery+  
NeuroticismD1detachment+ NeuroticismD1relaxation+ NeuroticismD1control+  
NeuroticismD1mastery+weekend+(1|participant.number),data=myd) summary(model3)
```

```
model4<-lmer(exhaustion.monday~NeuroticismD1+detachment+relaxation+control+mastery+  
NeuroticismD1detachment+ NeuroticismD1relaxation+ NeuroticismD1control+  
NeuroticismD1mastery+weekend+(1|participant.number),data=myd) summary(model4)
```