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Master Thesis

**Recovery from Work-Related Stress:
*The Effect of Lunch Break Interventions During Winter***

Master in Environmental Psychology

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List of terms

The terms and concepts applied in the current thesis is explained in the text with references, however, basic descriptions are provided below in order to heighten readability.

Demands: physical, psychological, social, or organizational features of the job requiring physical, cognitive and emotional effort.

Ego depletion: the reduced capacity to exercise self-control, i.e. failure to regulate behaviour, attention, and emotions.

Ego restoration: a concept that attempts to measure the capacity to exert self-control using the level of willpower as a resource for recovery.

Emotions: a conscious subjective feeling, such as happiness and sadness, originating from the environment/circumstance, social factors, or mood.

Negative affect: the higher the negative affect or activation the more distress and undesirable engagement the person experiences (e.g. anxiety vs. depression)

Positive affect: the higher the positive affect or activation the more pleasurable engagement the person experiences (e.g. enthusiasm vs. fatigue).

Progressive muscle relaxation: a technique that sequentially go through the major muscle groups, tensing before releasing. This reduce tension (i.e. relaxation).

Recovery experience: the subjective psychological state a person experiences during a break (i.e. experiencing detachment from work-related thoughts)

Recovery outcome: the subjective psychological state a person experiences after a break (i.e. experiencing increased energy levels).

Recovery from work: unwinding from the stressor-induced physiological or psychological strain response (i.e. work-related stress) and going back to baseline arousal level.

Resources: physical, psychological, social, or organizational features of the job that assists in reaching goals, stimulating development, and reducing the impact of demands.

Self-control: A specific conscious type of self-regulation which allows the individual to inhibit strong impulses. This can involve affective, mental, or behavioural responses

Self-regulation: a general process of manage thoughts, behaviours, goals etc. An example is emotion-regulation (i.e. controlling emotional reactions).

State affect: momentary and current levels of positive and negative affect

Strain: a physiological or psychological reaction to a stressor

Stressor: work characteristics / events that provoke physiological or psychological reactions

Subjective vitality: a subjective state of feeling alive and alert (i.e. having energy available to self).

Trait affect: long-lasting emotional mood or general tendency to experience positive or negative emotions.

Work-related stress: the consequence of a stressor-induced physiological or psychological strain response.

Walk: in this context: a walk is understood as a short stroll outside the work environment with nature exposure.

List of Abbreviations

AF = Affective Rumination

ANOVA = Analysis of Variance

ANCOVA = Analysis of Covariance

COR = Conservation of Resources Model

DV = Dependent Variable

EP = Environmental Psychology

E-R = Effort-Recovery Model

ER = Ego Restoration

IV = Independent Variable

NA = Negative Affect

OHP = Occupational Health Psychology

PA = Positive Affect

PGR = Progressive Muscle Relaxation

PD = Psychological Detachment

SDT = Self Determination Theory

SRT = Stress Reduction Theory

SVS = Subjective Vitality

Preface & Acknowledgement

The starting point for the current thesis originates from my passion for mental health and stress at work. Throughout my masters thesis in Environmental Psychology I have developed an understanding of the person-environment link suggesting that it is crucial to take the context into consideration when investigate work-related stress. Especially because work is becoming increasingly demanding (i.e. technology allows employees to be available at all times). I believe it is vital to investigate what organisations can do to reduce work-related stress during the workday & possibly increase employee long-term health and well-being in a cost-effective manner.

First, I would like to thank Leif W. Rydstedt and Svein Åge K. Johnsen for giving me the opportunity to participate in your project, for having confidence in me, and for sharing your extensive knowledge.

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Abstract

The present thesis combined measurements, methods, and theoretical framework from both Occupational Health Psychology (OHP) and Environmental Psychology (EP) to provide a more nuanced picture of recovery from work-related stress. A randomised pretest-posttest field experiment was conducted with the aim to examine the immediate effects of a) progressive muscle relaxation, and b) a walk with nature exposure on subjective recovery experiences and outcomes, compared to a normal lunch break. All in all, employees seem to be happier and feel more vital after a short walk, compared to relaxation. This suggests that exposure to nature, physical activation and being away from the office has restorative effects. Furthermore, psychological detachment increased and negative affect decreased after the intervention in both groups, compared to their own usual lunch break. The current thesis has found a trend towards walks as an especially effective intervention method for increasing energy and positive emotions in employees. This suggests that lunch breaks as an intervention setting is an important area for future research to focus on, because it could contribute with an inexpensive and functional way to recover from work-related stress during the work-day. However, the effects were somehow inconclusive and the differences were diminutive, which suggests that more research is needed, particularly focusing on larger, more fatigued samples, together with the potential effects of season. The present thesis contributes to the literature by combining frameworks from both recovery, restoration, and ego-depletion perspectives. In conclusion, to our knowledge, the current thesis is the first to consider recovery in winter, and finding a positive effect of 'white' nature on recovery from work.

1. Introduction

1.1 Background

In Norway, only 1% report that they never experience work-related stress, and as much as 43% usually experience this daily (European Agency for Safety and Health at Work [EU-OSHA], 2013). There is pronounced evidence for the impact of work-related stress on health, well-being (e.g. Colombo & Cifre, 2012; Sonnentag, 2018b) and chronic stress (Safstrom & Hartig, 2013). This implies that stress in the workplace is an important area of investigation. However, stress is an ambiguous concept. Therefore, “*stressor*” is used to explain work characteristics or events that provoke physiological or psychological “*strain*” responses (Sonnentag, 2018b). People spend substantial amount of time at work, constantly interacting with the work environment. Hence, it is especially difficult for employees to avoid work-related stressors. It is particularly beneficial to examine how the impact of work-related stressors can be reduced, as the costs for this phenomenon is immense for employees (Sonnentag, 2018a, 2018b), organisations (Colombo & Cifre, 2012) and the society in general (Hassard, Teoh, Visockaite, Dewe, & Cox, 2018)

Work-related stress has a long tradition in the field of Occupational Health Psychology (OHP), focusing on how recovery processes (i.e. activities & experiences) and outcomes (i.e. the psychophysiological states of being recovered/restored) could be beneficial to reduce stress (Sonnentag, Venz, & Casper, 2017). In this context recovery is defined “*as the opposite of the psychophysiological activation process that occurs under stressful conditions*” (Colombo & Cifre, 2012, p. 130). In other words, recovery from work is understood as the process of unwinding from a stressor-induced strain response, returning to the pre-stressor level of arousal (Sonnentag, 2018b). Breaks from work are essential to promote these processes and could occur during work hours (i.e. internal recovery) or after work hours (i.e. external recovery) (Fritz, Ellis, Demsky, Lin, & Guros, 2013). Research has typically focused on external recovery (Sonnentag & Fritz, 2015), however, internal recovery might provide crucial information to the field. One aspect of internal recovery is lunch breaks, which is defined as ‘*period(s) of the workday when work-related tasks are not required or expected or when employees proactively shift their attention away from work tasks as needed*’ (Hunter & Wu, 2016, p. 302). Lunch breaks themselves might not improve recovery to a great extent, but the

activities people participate in might be fundamental to this process (Fritz et al., 2013). Arguably, lunch breaks provide a great opportunity to investigate how recovery activities might impact recovery, as they usually occur during the middle of the day and are longer than other breaks during the day (Troughakos, Hideg, Cheng, & Beal, 2013). To our knowledge, few studies have inspected lunch breaks as the intervention period for recovery (de Bloom et al., 2017; Sianoja, Syrek, de Bloom, Korpela, & Kinnunen, 2018). Consequently, evidence on the type of activities that might interfere with the recovery process during lunch breaks is scarce, and therefore an area that requires more attention.

Furthermore, the OHP field has mainly focused on the dynamics of the recovery process and its potential outcomes, failing to consider the potential influences of the physical environment it occurs in. Nevertheless, psychophysiological responses cannot be completely isolated from the setting it happens in (Gifford, 2014). Therefore, the field of Environmental Psychology (EP) might be fruitful to incorporate into the OHP practice, as there is extensive research on the qualities of restorative environments available (Bratman, Hamilton, & Daily, 2012). Restoration is understood as *'the process of renewing, recovering, or re-establishing physical, psychological, and social resources or capabilities diminished in ongoing efforts to meet adaptive demands'* (Hartig, 2004, p. 273). Consequently, restorative environments are those surroundings that promote, rather than hinder, restoration. Both OHP and EP focus on how to re-establish cognitive and physical resources spent on demanding activities, and therefore the concepts of recovery and restoration could be theoretically related to each other, (Zijlstra, Cropley, & Rydstedt, 2014). To our knowledge, this relationship has not been tested empirically, yet combining these two fields would give a more nuanced picture of recovery from work-related stress.

1.2 Aim and research question

Based on the matters discussed above, the present thesis aims to combine measurements and methods from both OHP and EP fields, which might contribute to a more nuanced understanding of recovery from work-related stress. The objective is to perform a randomised field experiment, investigating the effect of two activities on recovery experiences and outcomes. Accordingly, the overall purpose of the present thesis is to empirically analyse how a) a walk with nature exposure (away from the office) and b) progressive muscle relaxation in

the normal work environment (in the office) during lunch breaks affects recovery experiences and outcomes immediately after the intervention, compared to control tests (i.e. pre-test) performed after a usual lunch break.

It is postulated that recovery activities during lunch breaks will decrease the strain process activated from job stressors, and consequently induce positive recovery and reduce strain experiences and outcomes. It is expected that the recovery activities (i.e. walk and relax) and the associated experiences (e.g. psychological detachment) enhances the recovery processes, immediately leading to positive recovery outcomes (e.g. positive affect, vitality, happiness etc.).

All in all, the intervention will have an effect if the individual's post-test scores are larger than the pre-test scores (i.e. control/usual lunch break). Furthermore, it is believed that the walk group will have a greater restorative effect than the indoor relax group, as they are: a) physically away from the office; b) exposed to nature; and c) in physical activation.

1.2.1 Hypotheses

H1: *Positive recovery experiences (psychological detachment) and outcomes (ego restoration, positive affect, subjective vitality, happiness) will increase from pretest to posttest, but to a greater extent in the walk group.*

H2: *Negative recovery experiences (affective rumination) and outcomes (negative affect, sadness, tension) will decrease from pretest to posttest, but to the effect might be more prominent in the walk group.*

1.3 Scope of thesis

First, theories and definitions fundamental to recovery and restoration from work-related stress will be presented. The potential psychological and physiological effects of work-related stress will be considered, especially the long-term health and well-being implications. Additionally, an ego depletion perspective of self-regulation will be incorporated into the thesis, stressing the importance of an individual self-regulation component in the utilisation of resources. Secondly, a thorough description of the methodology is offered, before the analysis and results

are presented. Then, the findings will be summarised and discussed according to the theoretical framework. Finally, the main findings of the thesis will be summarised in a concluding paragraph.

1.3.1 Delimitations

Recovery from work-related stress is a broad topic and yields a vast range of possibilities and approaches for investigation. Therefore, the scope of the current thesis is narrowed to only include a brief overview of theories and research most relevant to the research question. The data material is part of a larger project, which gives a great scope of available data material through the questionnaires. It is recognised that there are many ways to analyse and investigate this material. However, the current proposition does not aim to use all the collected data material, and the data analysis will therefore be narrowed down to answer the specific research question.

1.4 Theoretical framework

The current section aims to give brief overview of the theoretical background for the present thesis. Different perspectives on recovery from work-related stress are provided, and concepts from two different fields are brought together to give a more nuanced picture on the research question. Furthermore, theories on self-regulation might shed light on how people manage their resources, and the aim is to incorporate this view into recovery and restoration. Additionally, there might be individual differences in how people experience and cope with stress, and therefore emotion, mood and personality will be outlined briefly.

1.4.1 Occupational Health Psychology (OHP) field – “Recovery”

Recovery from work has been largely influenced by the Effort-Recovery Model (E-R, Meijman & Mulder, 1998) and the Conservation of Resources Model (COR, Hobfoll, 1989, 2012; Hobfoll & Schumm, 2009; Hobfoll & Shirom, 2001). Both models assume that stressors necessitate resource consumption. Recovery occurs when work demands are no longer present (E-R) and when new resources are acquired (COR). Thus, a decrease in job demands and an increase in resources should contribute to recovery from work-related stress (Demerouti, Bakker, Geurts, & Taris, 2009). Job demands is the *“physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (i.e. cognitive or emotional) effort”* (Schaufeli & Bakker, 2004, p. 296). Job resources, on the other hand, is understood as the aspects of the job that assists in goal achievement, stimulates individual development, and reduces costs of demands (Schaufeli & Bakker, 2004). Thus, job demands could turn into stressors, thereby provoking a strain response. Bakker and Demerouti (2007) proposed the Job Demand-Resource (JDR) model to clarify that any resources are valuable for decreasing any job demands. This is a heuristic perspective, or a way of thinking about resources and demands, that allows different recovery concepts to assess the same assumptions (Schaufeli & Taris, 2014).

The E-R model claims that effort or energy spent at work draws upon available resources to the individual. These resources are limited and decrease during work-hours, and consequently employees must organise them to achieve their goals (Meijman & Mulder, 1998). In other words, strain reactions are stimulated when spending effort on a task. Effort can be understood as a job demand, because the individual must be willing to spend of their limited capacity and

energy on different job tasks. Energy available to the individual is essential for job performance (Bakker & Xanthopoulou, 2009). Energy depletion and possibly fatigue will lead to reduced capacity to perform due to reduced energy and motivation. Stress reactions occurs when the individual has to compensate for low energy levels to deal with the present requirements or demands (Zijlstra, 1996). According to this view, recovery is about restoring energy levels, which is a crucial, but limited resource (Meijman & Mulder, 1998). Conferring to the E-R model, recovery occurs when exposure to demands are decreased/not present, and the psychophysiological functional system returns to the prestress levels (Geurts & Sonnentag). Insufficient recovery necessitates extra effort and may result in short-term problems, such as fatigue, and potentially also long-term health-related consequences (Devereux, Rydstedt, & Copley, 2011).

The COR model argues that work-related strain responses occurs when key-resources are threatened or lost, and new resources cannot be acquired (Hobfoll & Shirom, 2001). Consistent with this, individuals have an instinctive motivation to produce, promote and protect resources. According to this view, humans have built-in need to gain and conserve their resources. However, applied to the context of work, adverse situations might be specially demanding on resources (Gorgievski & Hobfoll, 2008).

Both E-R and COR models is concerned with the psychological processes of recovery, which is linked to the allostatic load model of physiological processes (McEwen, 1998; McEwen & Wingfield, 2003). This model assumes that allostatic systems is activated/aroused as a response to stressors (e.g. increased cortisol levels or blood pressure) and go back to baseline when the stressor diminishes. If recovery does not occur, it might lead allostatic overload leading to negative health outcomes such as cardiovascular disease (McEwen, 2017). Thus, effort spent on work tasks depends on both physical and mental effort. Consequently, of the most important resources to handle demands is available 'energy', depending on the circadian rhythm and. In other words, the physiological system determines energy levels whereas cognitive system mobilize this by levels of effort to regulate arousal (Zijlstra et al., 2014).

The E-R and COR models have been criticised for portraying a static picture of recovery where one is either recovered or not recovered (Zijlstra et al., 2014). However, it is likely that this is a dynamic process of using and retrieving resources, controlled by the individual. Accordingly,

“recovery (from work) can best be understood as the process that restores the individual’s energetic and mental resources” (Zijlstra et al., 2014, p. 3).

In conclusion, the recovery field has focused on how and when to recover; resource consumption facilitates fatigue/exhaustion due to stressors/demands, and replenishment of resources leads to recovery. However, the field largely neglects the context of recovery.

1.4.2 Environmental Psychology field – Restoration

Environmental Psychology, on the other hand, suggests that the environment has an impact on the recovery process and stresses that restorative environments are particularly important to understand recovery (Bratman et al., 2012). Restorative environments are understood as settings stimulates, and not hamper, recovery (Kaplan, 1995).

Firstly, The Stress Reduction Theory (STR, Ulrich, 1993) claims that people are predisposed to respond positively to unthreatening natural environments, leading to a relaxing effect of being exposed to nature. Indeed, research has demonstrated that natural environments have greater restorative effects than the built environment, reducing levels of negative emotions (Berman, Jonides, & Kaplan, 2008; Hartig, Evans, Jamner, Davis, & Gärling, 2003). According to SRT, simply viewing nature will stimulate positive emotions by blocking negative emotions through the parasympathetic system (Gladwell, Brown, Wood, Sandercock, & Barton, 2013).

Secondly, the Attention Restoration theory (ART, Kaplan & Kaplan, 1989; Kaplan, 1995) proposes that directed attention (i.e. the ability to keep focus and inhibit distractions) may lead to mental fatigue and stress, unless the individual is exposed to a restorative environment (i.e. *being away, extent, soft & hard fascination, and compatibility*). That is, restorative environments helps the individual to become psychologically detached from worries (*‘being away’*), feel comfortable and engaged (*‘extent’*), enjoyment and familiarity (*‘congruence’*), and attention is held without having to focus (*‘soft fascination’*) (Kaplan & Kaplan, 1989; Kaplan, 1995). Nature contains more stimuli that does not require any conscious attention or mentally demanding processes, allowing individuals to restore and recover their attentional resource. The built environment, on the other hand, contains unnatural and stressful stimuli demanding conscious attention and cognitive demands. *Being away* mentally is crucial for

restoration, because the person may worry or ruminate on stress exposure, even if he or she is physically separated from the stressor (Kaplan, 1995). Furthermore, there is extensive evidence for the positive effects of walking in nature on psychophysiological health and well-being (Loureiro & Veloso, 2017). For example, nature exposure improves positive affect and decreases negative affect (Tsunetsugu et al., 2013), improves mood (Hartig et al., 2003), lowers blood pressure, heart rate and cortisol levels (Korpela, De Bloom, & Kinnunen, 2015), increases vitality (Ryan et al., 2010), improves attention and executive functioning (Berman et al., 2008), and reduces fatigue (Ulrich et al., 1991).

In conclusion, Environmental Psychology can add to the recovery literature by focusing on where to recover. Both perspectives can be further understood by considering the ego-depletion perspective, as discussed below.

1.4.3 Ego-depletion perspective

The ego-depletion perspective takes the process of self-control (i.e. mental willpower) into account when considering how stressors affect strain processes (Muraven & Baumeister, 2000). This perspective is very relevant for work-related stress, because it provides an effective explanation of self-control as a limited psychological resource for coping with job demands (Muraven & Baumeister, 2000). When this resource is depleted, the individual feels exhausted and are less able to “*regulate one’s behaviour, attention, and emotions*” (Prem, Kubicek, Diestel, & Korunka, 2016, p. 22). This state is labelled ego-depletion. Thus, after a stressful day at work, employees might feel like they have less energy to accomplish goals and might experience less self-control while executing subsequent tasks, subsequently resulting in decreased performance. This view is largely based on the Strength Model of Self Control (Baumeister, Vohs, & Tice, 2007).

Furthermore, studies indicate that self-regulation and executive functioning is associated with each other, and might share a common resource pool (e.g. Blair & Razza, 2007; Tice, Baumeister, Shmueli, & Muraven, 2007; Vohs, Baumeister, & Ciarocco, 2005). More recently this perspective was applied to the Attention Restoration Theory, arguing that the natural environment has the potential to restore this common resource; exposure to nature should restore cognitive resources quicker and facilitate emotion regulation (Kaplan & Berman, 2010). Self-control/willpower is linked to directed attention, and ego-depletion is associated

with attentional fatigue. In other words, conscious or directed attention is a self-control resource that could lead to attentional fatigue & ego-depletion if depleted. Thus, it is most likely that directed attention recovers from attentional fatigue when the individual is resting. This implies that nature is an effective and non-invasive intervention that can be applied to facilitate recovery, as it requires minimal direct attention while capturing involuntary attention abilities (Berman et al., 2008; Kaplan, 1995). This notion has been supported by studies indicating that nature counteracts ego-depletion (Chow & Lau, 2015).

Furthermore, research suggests that depletion of cognitive and emotional resources of self-control has a reciprocal relationship, affecting each other's functions (Grillon, Quispe-Escudero, Mathur, & Ernst, 2015). Thus, regulating emotions is crucial for both physical and mental functioning (Gross & Muñoz, 1995; Gross, Richards, & John, 2006), while requiring effortful cognitive control. Studies suggest that positive affect increases the ability to self-control (Tice et al., 2007), and therefore individuals might experience enhanced emotion regulation capacity after inducing positive affect or emotions. Therefore it is possible that recovery activities inducing positive affect and emotions could lead to better self-control after returning to work. Higher energy levels (i.e. vitality) has also been linked to ego-depletion, suggesting that self-control is a crucial resource (Deci & Ryan, 2008).

All in all, considering recovery in terms of the ego depletion perspective, might shed light on the type of resources that are depleted and how to measure their recovery outcomes.

1.4.4 The Recovery process

As explained previously, the restoration and recovery concepts might overlap to some extent. In this context, restorative environments can aid replenishment of resources by reducing job demands, leading to a greater recovery from work-related stress. This is typically referred to as the recovery process, which consists of interrelated recovery activities and experiences (Sonnentag et al., 2017). Thus, the type of activity one engages in during a break is thought to either accelerate or hamper the psychological state of the person during the break (i.e. recovery experience) and after the break (i.e. recovery outcome). Two different activities that might aid recovery is relaxation techniques and exposure to natural environments.

Recovery activities

Progressive muscle relaxation (PMR) is a relaxation technique that focuses on systematically tensing and releasing of muscle groups to decrease psychophysiological strain by activating the parasympathetic nervous system and consequently increase relaxation (Jacobson, 1938). Because it has been linked to positive affect and reduced fatigue (Fritz, Sonnentag, Spector, & McInroe, 2010), relaxation exercises have been the focus in many studies, using different approaches such as mindfulness, muscle relaxation, breathing techniques, meditation etc. (Richardson & Rothstein, 2008). There is, however, insufficient evidence on the effect of relaxation exercises on recovery during lunch breaks. Yet, the few studies examining this relationship reported physiologically lower cortisol levels and experiences of strain (Krajewski, Sauerland, & Wieland, 2011), tension and fatigue (de Bloom et al., 2017), higher levels of detachment during breaks, and after work well-being, concentration, strain, and fatigue (Sianoja et al., 2018). Accordingly, relaxation might accelerate subjective experiences of recovery as attention is focused on the muscles rather than work-related tasks.

Relaxation can also be achieved more indirectly through a short walk with nature exposure. There is extensive evidence for the positive effects of walking in nature on psychophysiological health and well-being (Loureiro & Veloso, 2017). Besides, physical activity is widely recognised as a beneficial stress reduction intervention, that is even more effective with nature exposure (Calogiuri et al., 2015; Korpela & Kinnunen, 2011). Based on previous findings and theoretical frameworks, there are several ways that lunch break walks with nature exposure could contribute to recovery: i.e. being physically away from job demands, engaging in physical activity, or exposure to nature (Sianoja et al., 2018). However, there is scarce evidence on the effect of walks on recovery during lunch breaks. de Bloom et al. (2017) argues that walks reduce demands and create new resources, whereas relaxation only reduces demands. Thus, walks might have a greater benefit on the recovery experiences and outcomes compared to relaxation exercises.

Recovery experiences – the detachment concept

The activities that people engage in influences the recovery experiences, i.e. “*the degree to which the individual perceives that the activities he/she pursues during non-work time helps him/her to restore energy resources*” (Demerouti et al., 2009, p. 91). Particularly, detaching from work has been recognised as an important part of recovery, because the absence of

demands in essential for recovery (Sonnentag & Fritz, 2007). Detachment from work is defined as “*the individual’s sense of being away from the work situation*” (Etzion, Eden, & Lapidot, 1998, p. 579). This resembles the “being away” concept in the ART, suggesting that natural environments should ease detachment. According to the E-R model, high work-related stress requires employees to find strategies to manage personal resources, such as exposure to nature or relaxation exercises. The more effort one spends on a work-related task, the greater the exhaustion.

The stress experience might be extended if perseverative thinking about stressors occurs (Brosschot, Gerin, & Thayer, 2006; Ottaviani et al., 2016). Perseverative thinking or cognition is “*the repeated or chronic activation of the cognitive representation of stress-related content*” (Brosschot, Pieper, & Thayer, 2005, p. 1045). Thus, the impact of a stressor, such as work load, could possibly remain stable due to unconscious perseverative thinking (Brosschot et al., 2014). The perseverative cognition hypothesis suggests that physical absence from demands might not be enough, as thinking about work can result in persistent strain reactions (Brosschot et al., 2006; Brosschot et al., 2005). According to this perspective, inability to recover could possibly lead to long-term health and well-being consequence such as burnout (Hobfoll & Shirom, 2001; Ottaviani et al., 2016).

Moreover, psychological detachment is about being mentally away from work during breaks (Sonnentag & Fritz, 2007). Recovery from strain might be related to the level that employees switch off from stressors at work, as a lack of psychological detachment is associated with prolonged strain processes and predicts poor recovery after work (Wendsche & Lohmann-Haislah, 2017). This is because the cognitive resources are engaged in work-related thoughts, overloading the psychophysiological functional system (Demerouti et al., 2009). Furthermore, psychological detachment from work is widely supported (Sonntag & Fritz, 2015) and is associated with increased positive and reduced negative affect, as well as reduced fatigue (Sonntag, Binnewies, & Mojza, 2008; Sonntag, Mojza, Binnewies, & Scholl, 2008).

Contrary to psychological detachment, rumination is about being mentally present during breaks. Thus, rumination is defined “*a class of conscious thoughts that revolve around a common instrumental theme and that recur in the absence of immediate environmental demands requiring the thoughts*” (Martin & Tesser, 1996, p. 7). Cropley, Michalianou,

Pravettoni, and Millward (2012) suggests that affective rumination (i.e. negative emotional thoughts) is different to, and more detrimental than, mentally engaging in work-related problem-solving. However, ruminating about an unfinished task or a deadline during breaks may have detrimental effects on the recovery process. This is labelled work-related rumination, i.e. perseverative thinking about work-related problems or issues (Cropley, Zijlstra, Querstret, & Beck, 2016). Elevated levels of rumination have been associated with amongst others fatigue (Querstret & Cropley, 2012), exhaustion (Donahue et al., 2012), worries about the future (Brosschot et al., 2006), and deficits in executive control (Cropley et al., 2016).

All in all, the recovery process consists of potential restorative effects of recovery activities and how the individual experiences these. Furthermore, mentally switching off from work is a consistent and good indicator of self-reported experience of recovery.

1.4.5 Recovery outcomes

The recovery process described above will potentially lead to recovery outcomes, i.e. the state or feeling of being recovered. This could be measured in different ways, as there are many different types of potential resources. However, building on the theories above, self-reported energy levels, cognitive self-control and positive feelings are essential resources in the context of work.

As mentioned previously, mental or physical energy levels is a potential recovery outcome, and might be labelled subjective vitality: the “*conscious experience of possessing energy and aliveness*” (Ryan & Frederick, 1997, p. 530). Self-Determination Theory (SDT, Ryan & Deci, 2000) argues that the effort individuals spend on controlling oneself drains energy, whereas autonomous regulation does not (Deci & Ryan, 2008). The literature supports this view, illustrating that individuals perform worse on tasks (i.e. give up faster, have trouble overriding impulses, and find it difficult to make decisions) (Baumeister, Bratslavsky, Muraven, & Tice, 1998). Furthermore, physiological indicators imply that self-control depletes blood glucose, linking the energetic component of vitality directly to the ego-depletion perspective (Galliot & Baumeister, 2007). In other words, ego-depletion is understood as having low energy and vitality is understood as experiencing high energy. Thus, the SDT and ego-depletion perspectives could be conceptually related (Deci & Ryan, 2008). However, ego-depletion

argues that all aspects of self-regulation and control drains energy, whereas SDT distinguishes these; self-control is based on externally induced motivation and self-regulation is based on autonomous intrinsic motivation.

Furthermore, willpower has been linked to the resource of directed attention, whereas ego-depletion has been associated with attentional fatigue (Kaplan & Berman, 2010). Thus, attention restoration ought to restore the resource of self-regulation and control. Building on this idea, the ego restoration concept was developed as an attempt to measure self-control by the strength of willpower (Johnsen, 2013). Thus, being ego restored is equivalent to having refilled the resource of willpower (i.e. self-control) after being ego-depleted. In other words, ego restoration can be understood as the cognitive function of willpower for coping with demands, and as an outcome of the restorative effects of nature (Johnsen & Rydstedt, 2013). Ego restoration is also related to using nature for regulating emotions, which again influences positive affect (Johnsen, 2013; Johnsen & Rydstedt, 2013). Furthermore, those high in stress, negative affect, and neuroticism could potentially have elevated effects of nature (Johnsen, 2013). Neuroticism is a tendency for a person to frequently experience negative emotionality, even when exposed to trivial stressors (Gross, Sutton, & Ketelaar, 1998).

Regulation of emotions and self-control are interrelated processes; negative affect might make self-control less likely, and failure to control oneself might lead to negative affect (Kashdan, Weeks, & Farmer, 2011; Tice & Bratslavsky, 2000). Based on the ego-depletion perspective, people high on negative mood use a lot of effort on self-regulation to cope with this (Muraven & Baumeister, 2000). Positive and negative affect is associated with feeling activated, resilient and pleased compared to tense, upset and irritated (Watson & Clark, 1994). Positive activities are thought to enhance positive affect, and the opposite goes for negative activities (Gable, Reis, & Elliot, 2000). Research has suggested that positive emotions help counteract ego-depletion, and therefore, activities that evoke positive affect/mood and emotions could aid recovery of ego-depletion (Ren, Hu, Zhang, & Huang, 2010). Mood and emotions are similar constructs but might differ in time frame; emotions are thought to be more provoked by stimuli than mood, and mood is therefore seen to be more stable (Gross, 1998).

In conclusion recovery from work leads to increased energy for self-control. This positive effect might be measured by levels of subjective vitality, ego restoration, affective mood and self-reported experiences of emotions.

1.4.6 Summary

Several perspectives on recovery from work has been presented. Topics are focused on the subjective recovery experience and potential outcomes, and specifically how the natural environment have restorative effects on self-regulation. Recovery theories might explain how job demands and resources interact, and restoration theories might further elaborate these findings by including the potential recovery outcomes of nature exposure (e.g. reduced negative emotions, enhanced energy levels, & increased cognitive functioning). The ego depletion perspective might be a central point to this, by suggesting that self-regulation is crucial for explaining how people manage their available personal resources at work. One such resource could be to use the natural surroundings around the office to handle cognitive fatigue and emotion-regulation. Another resource is relaxation techniques, offering a strategy to switch off mentally from demands while being in the work environment. The overall purpose of this thesis is to explore the effects of walks with nature exposure and progressive muscle relaxation exercises on recovery experiences and outcomes, hopefully providing information about how lunch break activities can aid recovery from work-related stress.

2. Method

2.1 Procedure

The present study is part of a larger project on work-related stress at the Inland Norway University (INN University) and has been accepted by the Norwegian Centre for Research Data (NSD).

Participants were recruited from several departments within a large organization. Exclusion criteria for participation was (a) part-time or irregular working hours; (b) inability to participate in the activities; and (c) non-office workers. For the present study, data collection took place at two different points in time, allowing for a pretest-posttest design. The first data collection took place mid-February and the second data collection took place mid-March, each lasting for about three weeks. This was to ensure that the participants had autonomy over when they wanted to perform the task, leaving a greater opportunity for people to engage in the activities during a lunch break, and limiting unnecessary provoked stress by the task. Information sheet and consent form were handed out at the start of the project (Appendix G).

All participants received the same questionnaire during the first data collection (see Appendix H). In addition to the recovery/restoration measures, demographics (i.e. age group, gender) and work characteristics (i.e. job title, weekly working hours, daily lunch break duration) were elicited. Participants were instructed to fill out the questionnaire immediately after a normal lunch break. Moreover, participants were randomly assigned to two different intervention groups (i.e. walk and relax). Participants received a replication of the recovery/restoration measures in the second data collection. Additionally, a social dimension was added to the questionnaire making it possible to control for social effects on the intervention. The questionnaire for the relax group is illustrated in Appendix J. Certain modifications suitable for the walk group were carried out; information about duration of the walk and description of the environment (see Appendix I). Standardised instructions for both relax (Appendix K) and walk (Appendix L) were given together with the questionnaires.

Several steps were taken to ensure commitment and to reduce dropout, for example sending out a friendly reminder via email close to each deadline and extending the deadline for a week.

2.2 Participants

Initially a total of 62 white-collar workers (females = 45, males = 17) from a Norwegian organization were recruited to voluntarily participate in the current investigation. The participants were randomised into two different intervention groups using excel RAND formula, creating two groups with 31 participants each. Response rate for part 1 was 83.87 % and 61.29 % for part 2. Thus, response rate dropped with 16.13 % after the first data collection, and another 26.92 % after the second data collection.

The final sample for the pretest-posttest design consisted of 38 participants (females = 27, males = 11). Participants worked in two different sectors, including education/academic (n = 12) and administration (n = 26). Most of the participants were females (71.1 %) and over 36 years old (84.2 %). Average working hours ranged from 5 to 10 hours ($M = 7.80$ hrs) and average lunch break ranged from 10-45 minutes ($M = 27.43$ min.). Descriptive statistics for the sample is illustrated in Table 2.

Table 1

Demographics and Work Characteristics for the Total Sample, and After Random Allocation to Either the Relax or the Walk Group

	Age group			Gender		Job title		Work characteristics	
	35-	36-50	51+	Male	Female	Academic	Admin	Work Hours M (SD)	Usual Break M (SD)
Total	15.5%	44.7%	39.5%	28.9%	71.1%	31.6%	68.4%	7.80 (0.72)	27 (7.34)
Relax	15.8%	52.6%	31.6%	26.3%	73.7%	26.3%	73.7%	7.64 (0.88)	28.42 (8.63)
Walk	15.8%	36.8%	47.4%	31.6%	68.4%	36.8%	63.2%	7.95 (0.49)	26.45 (5.85)

Note. M = Mean, SD = Standard Deviation. Usual break duration is measured in minutes.

To make sure that the final sample did not differ from drop-outs, Independent Samples t-test were conducted, showing no significant difference for any of the variables (i.e. age, gender, job title, work hours, lunch break duration, recovery/restoration). However, drop-outs experienced significantly lower levels of negative affect than participants ($M = 13.21$ vs. $M = 17.27$; $t(49) = -2.98, p < .01$).

2.3 Experimental manipulations

The two intervention groups participated in the lunchbreak activity once at any point during the three-week intervention period. In this way could to some extent control for poor weather conditions and autonomy. Autonomy of recovery activity is related to greater well-being (Trougakos et al., 2013), and therefore it was suggested that the participants could choose the time and day they wished to do the activity. This is, however, limited to selecting time and place and does not capture autonomy of type of activity.

2.3.1 Walk

A recommended route was presented to the subjects in the walk condition. However, they could choose to walk where they pleased. The particular organization were surrounded by an adequate amount of nature and parks. However, to have some control over the environment, participants were asked to shortly describe the environment around them during the walk. A duration of 15-20 minutes was recommended. Participants were also asked to control for the duration of walk in minutes, so this could be controlled for as well. For instructions given to the walk group see Appendix L.

2.3.2 Relax

A progressive muscle relaxation video was presented to the subjects in the relax condition. The video had a voice that lead participants through the activity together with an avatar illustrating how to perform the tension and relaxation of each muscle group. This video was chosen, as it might be easier to follow the exercise both visually and auditory without previous training. Another important consideration is that pictures of nature could have influenced the restoration experience. For instructions given to the relax group see Appendix K.

2.4 Material/Apparatus

As described in the procedure, participants received three different self-reported questionnaires. However, the specific measures for recovery/restoration is identical for all. The survey included 9 items measuring recovery experience (psychological detachment: 4 items; affective rumination 5 items) and 31 items measuring recovery outcome (ego restoration: 3 items; vitality: 5 items; positive affect: 10 items, negative affect 10 items; and 3 items measuring self-rated emotions). It is outside the scope of the current thesis to include all the measured variables in the analysis, but a brief description will be given of those included in the present thesis.

2.4.1 *Positive and negative affect Schedule (PANAS)*

A Norwegian version of the 20-item version of PANAS (Watson, Clark, & Tellegen, 1988) was used to assess mood. This scale has shown high reliability and validity (Crawford & Henry, 2004). PANAS were included to test the effect recovery and restoration from job related stress to subjective mood status. In this study total scale scores on positive affect (PA) and negative affect (NA) were calculated respectively, ranging between 10-50. A higher score on PA affect indicated more positive affect or activation and higher score on NA indicates stringer negative affect or activation. Cronbach's alpha for PA was $\alpha = .91$ for baseline and $\alpha = .94$ after intervention, respectively. For NA, Cronbach's alpha was $\alpha = .75$ before and $\alpha = .81$ after intervention, respectively.

Each participant was asked to rate how they "*usually feel*" in the preliminary questionnaire and how they "*feel now*" in the subsequent one. Thus, the pre- and post-test measured the construct in different ways; the pre-test measured a more global trait-like affect and the post-test measured a state-like affect. Thus, allowing to control for trait-like mood within subjects while testing for the effect of a state-affect immediately after the intervention. The reference was a 5-point Likert scale translated to Norwegian: *1 = very slightly or not at all, 2 = a little, 3 = moderately, 4 = quite a bit, 5 = very much.*

2.4.2 Ego restoration (ER)

Ego restoration is a measure of the restorative outcome of willpower (i.e. self-control) developed by (Johnsen, 2013). This scale consists of 3 items asking about how the participant feels now compared to usual, ranging from: *1 = strongly disagree* to *7 = strongly agree*. Total scores could range from a total sum between 3 to 21. The scale is inspired by the ego-depletion perspective, meaning that cognitive functions might be restored quicker with nature exposure, which will give space for emotion regulation (Johnsen & Rydstedt, 2013). The reliability of this scale is good (between $\alpha = .88$ and $\alpha = .90$) (Johnsen, 2013). Cronbach's alpha for Ego restoration in the present study was $\alpha = .95$ for baseline and $\alpha = .89$ after the intervention, respectively.

2.4.3 Psychological detachment (PD)

Psychological detachment was measured with the detachment subscale of the Recovery Experience Questionnaire (REQ) (Sonnetag & Fritz, 2007). The question was adapted to a lunchbreak situation. For example: *"During my lunch break I forgot about work"*. The present study used the 4-item detachment subscale, scored on a 5-point Likert scale, ranging from *1 = I do not agree at all* to *5 = I fully agree*. Total sum scores might range from 4 to 20, where higher scores indicate more mental detachment (i.e. switching off). Cronbach's alpha coefficient on the original scale is good ($\alpha = .89$) (Sonnetag & Fritz, 2007). Cronbach's alpha for PD in the present study was $\alpha = .79$ for baseline and $\alpha = .88$ after intervention, respectively.

2.4.4 Affective rumination (AR)

Affective rumination was measured using a translated version of the affective subscale of the Work-Related Rumination Questionnaire (WRRQ) (Cropley et al., 2012). This is thought to be at the other dimension of psychological detachment (Wendsche & Lohmann-Haislah, 2017). However, it can be argued that the questions could reveal more about emotional pervasive thinking and fatigue from work-related thoughts during breaks, rather than just "mentally switching off". The items were adapted to a lunchbreak setting instead of free time, for example: Do you become fatigued by thinking about workrelated issues during your *"lunchbreak"* instead of *"free time"*. The present study used the 5-item affective subscale, scored on a 5-point Likert scale, ranging from *1 = very seldom/never*, *5 = very often/always*.

Total scores range from a sum of 5 to 25, where a higher score indicate higher levels of negative affective rumination. The affective subscale has high internal consistency, $\alpha = .81 - .91$. (Querstret & Cropley, 2012; Syrek, Weigelt, Peifer, & Antoni, 2017). For the present study, $\alpha = .85$ for pretest og $\alpha = .91$ for posttest.

2.4.5 Subjective Vitality (SVS)

Vitality was measured using a 5-item version (Kawabata, Yamazaki, Guo, & Chatzisarantis, 2017; Liu & Chung, 2018) of the Subjective Vitality Scale (Ryan & Frederick, 1997). Item two and five from the original scale was not included (“*I don’t feel very energetic*” & “*I look forward to each new day*”). The foremost is the only question being negatively worded, and might not be a good fit for one single construct of vitality (Bostic, Rubio, & Hood, 2000). The latter might measure optimism and not energy (Liu and Chung, 2019). The scale was answered on a 7-point Likert scale where $1 = strongly disagree$, and $7 = strongly agree$ (Ryan et al., 2010). Total scores might range from a sum of 5 to 35. Cronbach’s alpha for the 5-item scale is good ($\alpha = .70$ to $.92$). Cronbach’s alpha for vitality in the present study was $\alpha = .92$ for baseline and $\alpha = .93$ after intervention, respectively.

2.4.6 Emotions

The emotions happy, sad, tense was measured as independent single-item constructs on a Likert scale from $1 = not at all$ to $7 = extremely/very much$. Participants were asked to indicate how they feel in this moment (i.e. “*How do you feel right now?*”) for all three emotions.

2.5 Design and analysis

The present study was an field experiment field with a mixed pretest-posttest design (see Figure 1) where pre-test scores served as control for possible intervention effects within subjects and the relaxation exercise served as a control treatment comparison. This was decided due to: 1) a high chance of drop-outs in repeated measures; 2) a relatively low sample size; and 3) the assumption that the environment/setting in the walk group might have advantages over the relax group.

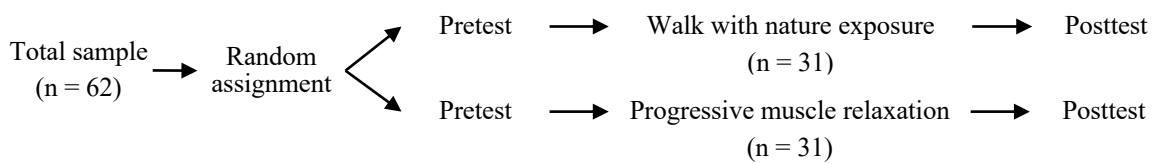


Figure 1. Illustration of the Research Design.

The current research design allows for two appropriate and non-biased methods of analysis: Analysis of Covariance (ANOCVA) using pretest as the covariate, and Analysis of Variance (ANOVA) between pretest and posttest (van Breukelen, 2006). It has been suggested that ANCOVA has more power, but this can be accounted for by running both methods and comparing the results (van Breukelen, 2013). As ANOVA will answer the current research question better than ANOCA, it was decided to use this as the main analysis. However, we quality checked results by comparing it to separate ANCOVAs.

Statistical analysis was performed using SPSS version 29 and Microsoft Excel. First, preliminary analysis was undertaken to test assumptions. Secondly, a two-way mixed design ANOVA was applied (Field & Hole, 2003) to test between and within differences between the walk and relax interventions before and after the recovery activity. There were one independent variable (IV): group (with two levels: relax, walk). The dependent variables (DVs) were total scores on levels of positive affect, negative affect, ego restoration, psychological detachment, affective rumination, subjective vitality, and emotions. Other potentially confounding variables were tested for: age (with three levels: 35-, 36-50, 51+ years old); gender (with three levels: male, female, other); job title (with two levels: administration, professor); normal length of workhours; normal length of lunch breaks, social intervention (with three levels: alone, with one other, with several), and length of the walk intervention.

2.6 Ethical considerations

The proposed project was approved by the Norwegian Social Science Data Services (NSD) prior to data collection, and followed the laws and regulations recommended by the ethical procedures for Inland Norway University. Anonymous self-reported questionnaires were used, and no sensitive personal data nor information about any third parties were collected. The

participants received a written statement where they were informed about what they were agreeing to participate in, and written consent were acquired (Appendix G). Since contacts with participants happened over mail, questionnaires were collected using paper and pencil method (i.e. participants were asked to send answers with the internal post system using anonymous codes). This made sure that anonymity was secured.

3. Results

3.1 Preliminary analyses

3.1.1 Screening for error in dataset

Electronic data was manually screened against the raw data for typing errors. Further confidence in accuracy of the data file was stipulated using univariate descriptive statistics. It was decided to code non-responses and incorrect responses (i.e. when two boxes had been ticked instead of one) as missing data. Due to the longitudinal design, drop-out before the first and second wave of data collection were also considered missing data.

3.1.2 Missing data

Missing Variable Analysis (MVA) using SPSS 25 was undertaken to inspect the pattern and extent of missingness. Little's MCAR test was non-significant, $X^2(775) = 495.39, p = .99$. This indicates that the data is missing completely at random (MCAR) (Little, 1988). A total of 14 cases were missing at the *person-level* in part 2 (Newman, 2014) and listwise deletion was performed for these, leaving a sample total of 38. The missing data for the final sample ranged between 0 % - 7.9 %, and consisted of both *item level missingness* (i.e. non-answered items on a scale) and *construct-level missingness* (i.e. the whole scale is left) (Newman, 2014). As the data is most probably missing MCAR, pairwise deletion was considered for *construct-level missingness* and mean imputation for *item level missingness*. Quality check was undertaken by rerunning analysis with and without deletion and imputation method.

3.1.3 Assumptions

The emotion variables (i.e. happy, sad, tense) are single-item constructs. Nevertheless, they are viewed as an interval scale in this context (Carfio & Perla, 2007). Each group of the independent variable was tested for normality on the different dependent variables (Appendix A) The Shapiro-Wilk was used due to a sample size smaller than 50 (Verma & Abdel-Salem, 2019). Furthermore, skewness and Kurtosis z-scores were calculated with the formulas suggested by (Tabachnick & Fidell, 2014, pp. 113-114). Values greater than 1.96 is significant at $p < .05$ (Field, 2009), suggesting non-normality (Appendix A). Moreover, box plots were

inspected for extreme outliers (i.e. more than three box lengths), and the 5 % trimmed mean was checked against the mean (see Appendix B), suggesting that potential outliers does not have a huge impact. Additionally, no cases had very large standardized scores on any of the variables ($z < 3.29$)(Appendix B)(Tabachnick & Fidell, 2014, p. 107). It is therefore safe to continue analysis without transforming the data. This should only be performed as a last solution, according to (Field, 2009). Conclusively, ANOVA/ANCOVA are robust methods, and therefore normality should not distort the data too much (Tabachnick & Fidell, 2014). Other assumptions were tested for together with specific analyses.

3.1.4 Distribution and baseline differences between groups

Running several one-way ANOVAs indicate no baseline differences between groups on any of the recovery experiences & outcomes ($p > .05$), except for negative affect and sadness (Appendix D). Pearson Chi-square tests were conducted for all categorical variables and independent samples t-tests were undertaken for continuous variables; there were no differences between the groups. Furthermore, there were no association between groups in age, gender, job type, usual work hours, normal lunch break duration, or social effect of intervention (Appendix C). The relax intervention was static at 15 minutes, whereas duration of the walk intervention differed between participants (approximately 20 minutes on average) (Appendix C). Although length of intervention was significantly different between the intervention groups, there was no significant correlation between the recovery and intervention length (Appendix F), suggesting that this did not interfere with our results.

3.2 Hypothesis testing – intervention effects

First, several mixed between-within subject ANOVAs were conducted to assess the impact of the two different interventions (i.e. walk and relax) on the recovery experiences and outcomes, across two different time periods (i.e. pre-test after a normal lunchbreak and post-test after intervention). The interactions and main effects for all separate mixed ANOVAs are summarised in Table 2 and the means and standard deviations in Table 5.

Examining Levene's test for equality of variance indicated that equality of variances can be assumed for all variables, except pre-negative, post-ego restoration and experience of sadness

($p < .05$) (Appendix E). Yet, the sample size is reasonably similar, and ANOVA is robust against this violation, so the analysis will be reported below (Tabachnick & Fidell, 2014).

Table 2.

Mixed Between-Within ANOVAs for the Effect of Recovery Activities During Lunch Breaks Between Groups (Group Effect), Across Time (Time Effect) and for Group x Time Interactions.

Recovery experiences & outcomes	Group effect		Time effect		Group x time	
	<i>F</i> -value	η^2	<i>F</i> -value	η^2	<i>F</i> -value	η^2
Positive affect	0.04	.01	9.67**	.22	1.94	.05
Negative affect	2.36	.07	25.87**	.43	2.36	.07
Psychological detachment	0.05	.01	9.84**	.22	0.89	.02
Subjective vitality	1.90	.01	1.64	.04	5.75*	.14
Ego Restoration	2.41	.06	4.49*	.11	0.87	.02
Affective Rumination	1.44	.04	0.03	.01	1.07	.03
Happy	0.09	.01	5.68*	.14	7.18*	.17
Sad	2.04	.05	0.23	.01	0.34	.03
Tens	1.08	.03	2.30	.06	0.00	.01

Note. * $p < .05$; ** $p < .01$. Effect size (partial eta squared - η^2): Large effect (0.14), Medium effect (0.06), Small effect (0.01).

Table 3.

Mean and Standard Deviations of Total Scores on Recovery Experiences and Outcomes, After a Regular Lunch Break (Pre) and After the Intervention (Post) Between the Walk and Relax Group.

Recovery experiences & outcomes	Walk		Relax	
	Pre <i>M (SD)</i>	Post <i>M (SD)</i>	Pre <i>M (SD)</i>	Post <i>M (SD)</i>
Positive affect ^a	32.11 (6.54)	30.00 (7.22)	33.42 (7.85)	27.89 (9.71)
Negative affect ^a	18.82 (5.63)	12.45 (4.39)	15.51 (3.20)	12.6 (3.31)
Psychological detachment ^a	11.46 (3.41)	13.29 (4.28)	11.68 (4.11)	12.44 (3.97)
Subjective vitality ^a	17.41 (4.80)	21.29 (6.13)	18.83 (7.05)	17.94 (6.95)
Ego Restoration ^a	12.34 (4.16)	12.00 (2.55)	11.83 (4.46)	9.94 (4.19)
Affective Rumination ^a	12.84 (2.85)	12.42 (4.21)	10.95 (4.01)	11.53 (4.27)
Happy ^b	3.84 (1.21)	4.74 (1.10)	4.42 (1.17)	4.37 (1.34)
Sad ^b	2.47(1.12)	2.37 (1.57)	1.79 (0.92)	2.37 (1.57)
Tense ^b	3.32(1.57)	2.95 (1.39)	2,84 (1.54)	2.47 (1.84)

Note. M = Mean; SD = Standard deviation.

a. Based on total sum scores

b. Based on average score in single item scale

3.2.1 Interactions

There were two significant interactions between group and time: subjective vitality and happiness.

Subjective vitality

There was an interaction between intervention group and time for subjective vitality (SVS), Wilks' Lambda = .86, $F(1,36) = 5.75$, $p = .02$, $\eta^2 = .14$, with a large effect size. This suggests that change in scores on vitality is different from pre-test to post-test, depending on the intervention group. In the walk group, vitality increased from pre-test ($M = 17.63$) to post-test ($M = 21.11$), whereas it decreased in the relax group ($M = 19.58$ vs. $M = 18.53$) (Table 3). The nature of the SVS ranges from a total of 5 to 35, indicating that both groups scored around mid-level on the scale. The interaction is illustrated in Figure 2, indicating that the walk group had a positive effect of the intervention, whereas the relax group had a slight negative effect of the intervention. Post hoc tests using Bonferroni correction revealed that relax group did not differ significantly before and after the intervention of progressive muscle relaxation during lunch break ($p = .44$). However, the walk group differed significantly before and after walk with nature exposure during lunch break ($p < .05$). Furthermore, pre-test and post-test vitality between intervention groups was non-significant for both pretest ($p = .35$) and posttest ($p = .24$). Thus, we can conclude that a short walk outside during lunchbreak is an effective strategy for increasing vitality (i.e. recovery outcome), whereas progressive muscle relaxation is not an effective strategy for increasing vitality.

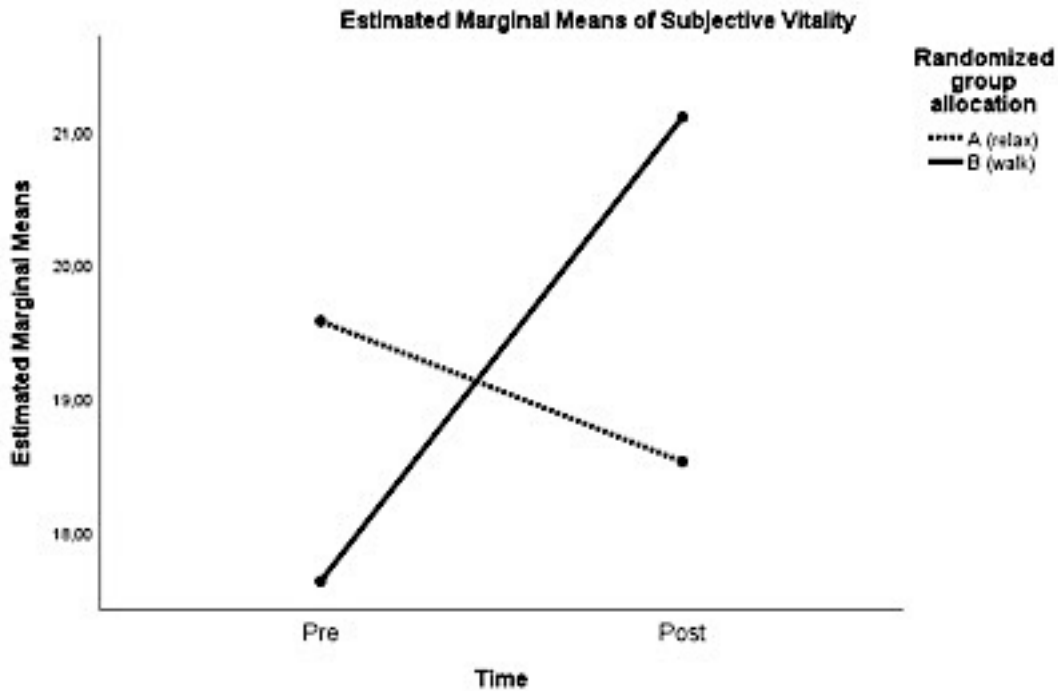


Figure 2. Group x time interaction after a regular lunch break (pre) vs. after either A) walk with nature exposure or B) progressive muscle relaxation (post) on subjective vitality scores.

Happiness

There was an interaction between intervention group and time for happiness, Wilks' Lambda = .86, $F(1,36) = 4.26$, $p = .01$, $\eta^2 = .17$, with a large effect size. This suggests that changes in happiness scores are different from pretest to posttest, depending on the intervention group. In the walk group, happiness increased from pretest ($M = 3.84$) to posttest ($M = 4.37$), whereas it decreased slightly in the relax group ($M = 4.42$ vs. $M = 4.37$) (Table 3). Happiness was measured on a scale from 1-7, indicating above mid-level scores in both groups. The interaction is illustrated in Figure 3, demonstrating that the walk group had a positive effect of the intervention, whereas the relax group had a slight negative effect of the intervention. However, the real differences are trivial.

Post hoc tests using Bonferroni correction suggests that the relax group did not differ significantly before and after the intervention ($p = .83$). However, the walk group differed significantly before and after intervention ($p < .01$). Moreover, pretest and posttest happiness is not different between groups for pretest ($p = .14$) and posttest ($p = .39$). Thus, it can be concluded that a short walk outside during lunchbreak is an effective strategy for increasing

an immediate feeling of being happy (i.e. recovery outcome), whereas progressive muscle relaxation is not as an effective strategy for increasing happiness.



Figure 3. Group x time interaction after a regular lunch break (pre) vs. after either A) walk with nature exposure or B) progressive muscle relaxation (post) on happiness scores.

3.2.2 Main effects

There were no main effects of group for neither of the recovery experience and outcome measures, besides, affective rumination, sad and tens did not show any significant effects at all (Table 2). Therefore, if all other variables are ignored, scores are the same for the walk and relax group. However, there were main effects of time for positive affect ($F(1, 34) = 9.67, p = .004, \eta^2 = .22$), negative affect ($F(1, 34) = 25.87, p < .001, \eta^2 = .43$), psychological detachment ($F(1, 36) = 9.84, p = .003, \eta^2 = .22$), and ego restoration ($F(1, 35) = 4.49, p = .041, \eta^2 = .11$).

Bonferroni correction to the post-hoc pairwise comparisons for time was applied and are reported for all significant main effects below. For positive affect, pretest scores are

significantly higher ($M = 32.78$) than post-test ($M = 28.89$) scores within participants, regardless of the intervention ($p = .004$). Thus, positive affect decreased by an average of 3.81 after the intervention was applied. For negative affect, pretest scores are significantly higher ($M = 17.08$) than post-test ($M = 12.86$) scores within participants, regardless of group ($p < .001$). Therefore, negative affect scores significantly decreased with a mean difference of 4.23 after interventions. For psychological detachment, pretest scores are significantly lower ($M = 11.17$) than posttest scores ($M = 13.03$) within participants, irrespective of group ($p = .003$). Thus, detachment scores significantly increased with a mean of 1.86 after both interventions. For ego restoration, pre-test scores are significantly higher ($M = 12.55$) than post-test scores ($M = 10.87$) within participants, irrespective of intervention group ($p = .04$). Thus, ego restoration scores decreased by 1.68 on average after application of the intervention.

3.2.3 Quality check – ANCOVAs with pretest as covariate (H1-H2)

Homogeneity of regression slopes is assumed for all variables (i.e. group x covariate, $p > .05$).

Furthermore, Levene's test for equality of variances was met for all variables before and after adding the covariate, except for ego restoration, suggesting that variances in scores across walk and relax group is unequal for this variable. Moreover, the covariate is likely to reduce error in variance in all variables, except for negative affect and sadness. Additionally, it might not be appropriate to include pretest scores as covariates for negative affect, ego restoration, and sadness (see appendix F).

Separate ANCOVAs for each DV was ran to quality check the ANOVA results above. The results of assumption testing and ANCOVA analyses is provided in the appendices to improve readability. Overall, we can be confident in the mixed ANOVA results. The ANCOVAs mimicked the results in the mixed ANOVAs for most variables the. As expected, ANCOVAs yielded greater power for some variables, yet, power was reduced in the ANCOVAs for negative affect, sadness and tension. For subjective vitality the ANCOVAs detected a difference between groups, that was not detected by the mixed ANOVA.

3.2.4 Additional post hoc

Several additional post hoc analyses were conducted to check for possible confounding variables at baseline. There was no significant correlation between work hours on dependent variables in neither groups (Appendix F), and we can therefore be confident that this does not interfere with the results. Furthermore, normal lunch break did not correlate with any variables in the relax group, but there was a negative correlation for post ER and pre VIT for walk. However, applying this as a covariate yielded the same results as without, so we can be confident in our analysis.

4. Discussion

4.1.1 Summary of main findings

The main aim of the current thesis was to investigate the effects of two different activities during lunch breaks on employees' subjective recovery experiences and outcomes. Although recovery from work-related stress is extensively studied, lunch breaks as the intervention setting has barely been touched upon. Furthermore, the current thesis proposes that there might be a conceptual overlap between recovery and restoration, being one of the first papers to investigate the effects of restorative environments on the recovery process, and to our knowledge, the first to investigate this during winter.

H1: Positive recovery experiences and outcomes will increase from pretest to posttest, but to a greater extent in the walk group.

Walks with nature exposure and progressive muscle relaxation had similar effects on recovery experiences and outcomes. The findings are slightly inconsistent and shows rather small effects on recovery. However, the most interesting findings are the effects on subjective vitality and happiness for the walk intervention, indicating that employees are happier and feel more vital after the activity, compared to the progressive muscle relaxation technique.

H2: negative recovery experiences and outcomes will decrease from pretest to posttest, but to the effect might be more prominent in the walk group

Walks with nature exposure and progressive muscle relaxation had similar effects on negative recovery experiences and outcomes as well. The findings are somehow inconsistent and shows rather small effects on recovery.

4.1.2 Explanations of main findings

Firstly, it was hypothesised that experiences of psychological detachment would increase after both interventions, compared to a normal lunch break. The results support this notion, although marginally; employees in both groups scored around the middle before and after the intervention. This corroborates with theories and research suggesting that individuals must unwind from job demands to regain resources (Meijman & Mulder, 1998), and that mentally switching off from work-related thoughts is important for recovery (Sonnentag & Fritz, 2007). However, the walk group did not, contrary to the hypothesis, have a better effect of the intervention than the relax group. This implies that psychological detachment did not capture the concept of 'being away' in the ART (i.e. detach from worries, strains and interruptions that is draining energy) for the current sample (Kaplan & Kaplan, 1989; Kaplan, 1995). This can be explained in two ways: either the progressive muscle relaxation also provided a sense of 'being away' or the sample was not too exhausted in the first place. Thus, being physically away from the work setting might not be needed to mentally unwind from work, and relaxation techniques might aid this process equally well. However, it is difficult to make any strong suggestions based on marginal differences.

Secondly, the assumption that affective rumination would be lower during both interventions was not met, showing very similar scores across both groups. Moreover, the scores indicate that affective rumination is infrequent in the sample, suggesting that employees are quite good at emotionally switching off from work. This assist the explanation above, because affective rumination is essentially the opposite of being detached. Thus, to verify the outcome of affective rumination on recovery, the sample might have to be higher on baseline affective preservative thinking. The results does not directly corroborate with the E-R model (Meijman & Mulder, 1998) which suggests that rumination delays resource replenishment, nonetheless, it cannot deny it either. Theories and research advocates that affective rumination is associated with fatigue and exhaustion, besides arguing that some individuals are more prone to experience this (e.g. neurotic or depressed individuals)(Querstret & Cropley, 2012). Thus, it does not seem like the current sample portrayed high levels of affective rumination, and therefore not needing recovery to a great extent as resources have not been diminished in the first place.

Thirdly, ego restoration showed a marginal tendency for the opposite effect of what was expected (i.e. decreasing after the intervention). Thus, the results do not confirm with the theories on ego depletion, which suggests that nature exposure would enhance attention restoration and willpower (Kaplan & Berman, 2010). However, both pretest and posttest scores are average, indicating that the cognitive resource of willpower has not been depleted in the current sample (i.e. employees might not be ego depleted at baseline).

Fourthly, positive affect did not increase after any of the interventions. This is the opposite of what was hypothesised. However, the scores hardly change from pretest to posttest, lying around the middle. Therefore, employees in the current sample shows moderate trait and state positive affect. This mimic a typical non-clinical sample (Watson et al., 1988), which might explain the lack of intervention effect. Conclusively, the sample is generally high in positive affect, compared to what would be expected from a fatigued or exhausted sample. This adds to the discussion above. Although the current study fails to directly support research on recovery and restoration, suggesting an increase in positive affect after relaxation, physical exercise and nature exposure (Fritz et al., 2010; Pinto, Goldstein, Ashba, Sciamanna, & Jette, 2005; Tsunetsugu et al., 2013). However, the sample seem to have sufficient positive affect for self-regulation.

Fifthly, negative affect decreased after both activities, as hypothesised. Both groups scored almost identical on state negative affect, although the walk group had higher trait negative affect. This implies that employees high in trait negative affect had especially good effect of the walk. Therefore, agreeing with theories and research, negative affect might decrease after nature exposure (Tice & Bratslavsky, 2000) and it is possible that people high on negative affect and neurotic traits will show a greater recovery effect (Johnsen, 2013). However, the differences in the present thesis are marginal, plus negative affect was low in both groups (very little / too little on the scale). This is normal in non-clinical samples (Watson et al., 1988), suggesting that the sample was very low on negative affect in general. This agrees with the exceeding consultations; the sample is actually not very exhausted.

Lastly, the proposed hypothesis that the walk intervention would have a greater effect on subjective vitality was met. Even though the differences between intervention groups shows strong effects, the differences are not enormous. This corroborates with theories and research

on subjective vitality (Deci & Ryan, 2008; Ryan et al., 2010), bringing together recovery, restoration and ego depletion research. In other words, the results support restoration theories, proposing that nature has restorative potential (Kaplan & Kaplan, 1989; Kaplan, 1995; Ulrich et al., 1991). It also supports recovery theories implying that job strain necessitates resource consumption by being away from demands, both physically and mentally (Meijman & Mulder, 1998) plus putting emphasis on the innate drive to actively acquire new resources (Hobfoll, 1989, 2012; Hobfoll & Schumm, 2009; Hobfoll & Shirom, 2001). Furthermore, it supports the ego-depletion perspective that self-control is restored by increased energy levels available to the individual (Deci & Ryan, 2008).

Similar patterns were found for subjective happiness; employees felt happier after a walk in nature and less happy after progressive muscle relaxation. This implies that the walk intervention, contrary to the relaxation, influences emotions positively. This also supported by theories and studies on recovery and restoration (Johnsen, 2013; Ren et al., 2010). Specifically, nature seems to replenish the resources needed for emotion-regulation, thus, making emotional-processing more accessible. Furthermore, sadness and tension were not significantly lower after neither interventions, and the walk group did not have a greater effect than the relax group. Nonetheless, the sample scored very low on negative emotions in general, implying that the effects of the interventions only could be minimal. This support the SRT, arguing that nature encourages positive emotions (Gladwell et al., 2013).

All in all, the results in the current thesis offers moderate support for the hypothesis that both interventions offer a lunch break without demands (e.g. increased psychological detachment), and according to the E-R model accelerating passive recovery (Meijman & Mulder, 1998). Additionally, both activities showed some evidence for active resource acquirement, as theorised by the COR model (Hobfoll, 1989, 2012; Hobfoll & Shirom, 2001). Nevertheless, the walk group seemed to have the largest effect, supporting the restoration theories about how natural environments seems to block negative emotions and induce positive (Ulrich et al., 1991), have vitalising effects (Ryan et al., 2010) and restorative potential (Kaplan & Kaplan, 1989; Kaplan, 1995; Kaplan & Berman, 2010). Conclusively, there is a trend towards a common theme based on recovery from work benefitting from nature walks. Furthermore, the present study is the first to establish a link between vitality and feelings of happiness after walking outside in winter (i.e. snow) in the context of recovery from work.

4.1.3 Limitations and implications for future research

The current thesis demonstrates the challenges of investigating work-related stress and the effects of interventions on internal recovery in an organizational context. Although the study was planned carefully, choices must be made. This might be subject to both human error and actual practical and economical possibilities.

Sample

Firstly, females were overrepresented in the sample, which could limit the external validity of the results. Secondly, the aim of the current study was to test recovery in white-collar workers, and therefore the results cannot be generalised to other types of jobs, such as blue-collar workers. Thirdly, longitudinal field studies with several data collections suffers from drop-outs and increased rates of missing data, which severely limits the sample size. Additionally, everyone were from one organization and some even the same departments. Thus, it cannot be guaranteed that the employees did not influence each other. However, very few reported doing the intervention together with someone else. Finally, the sample did not seem to suffer from high exhaustion or fatigue, which could explain the lack of strong results.

Procedure

Firstly, informing participants that the study is about work-related stress could impact the responses, yet it is not practically possible nor ethically correct to neglect this information. Secondly, the current study did not test levels of ego-depletion prior to the recovery activity, and therefore cannot assume levels of demands at the specific day. Furthermore, the intervention periods were rather short (only one lunch break). It might be that the effects would be stronger if the interventions were persistent over a few weeks or months, as new activities might demand more self-control resources than usual (de Bloom et al., 2017). Thus, it cannot be guaranteed that job demands and the demands of taking on a new behaviour depletes resources more than enhancing them (Muraven & Baumeister, 2000). However, based on the considered theories, this should not be the case for a walk in nearby surroundings, whereas progressive muscle relaxation might suffer from this until it becomes automatic (Deci & Ryan, 2008; Ryan & Deci, 2000). However, prolonged intervention periods are costly and challenging to execute. Moreover, the current design did not allow for high experimental control over the interventions, in order to prevent a potential stress induction by forcing

participation on specific days or with a researcher present. However, this limits the control over both the setting and performance on the intervention. Nevertheless, it was voluntary to participate and withdraw from the study at any point, and there is consequently no reason to suppose failures in compliance to protocol. Furthermore, the current study cannot explain the actual role of the everyday work environment. Previous studies have shown that natural elements such as plants or a view of nature from the office window have effects on restoration (Bringslimark, Hartig, & Patil, 2007; Evensen, Raanaas, Hägerhäll, Johansson, & Patil, 2013). The present study did not control for possible confounding effects of this, which could explain some of the similarities between the groups.

Design

One major limitation of the current study is that it was impossible to include a non-intervention control group due to sample size and drop-outs. However, the relax group worked as an intervention control between groups and participants functioned as their own control on pretest-posttest scores. This limits the power of the study; however, the design answers the research question adequately. On the other hand, more powerful group effects would be expected if a non-intervention control group was added. Furthermore, the validation of the results would be even greater with several data collections, allowing for cross-validation. Nevertheless, the current thesis is a part of a larger project, having a third data collection planned out. This will also allow to test for seasonal effects of recovery, which de Bloom et al. (2017) showed a tendency towards between spring and autumn. Furthermore, the current thesis is that it was performed during winter, and not much is known about the seasonal effects of nature as a restorative environment. Moreover, the current design only allows for interpreting the immediate effects of recovery activities and does not communicate anything about the possible long-term effects. Thus, longitudinal data is necessary. Finally, although the design gives some indication that the measured recovery experiences and outcomes are resulting from the effects of recovery activities, alternative explanations cannot be fully neglected, and therefore causality for the intervention effect cannot be established.

Material

Although the material was planned carefully, one scale was limited to human error; the wording in the affective rumination scale was misleading and might indicate usual affective rumination instead of the intervention effect. Thus, we cannot be certain if participants

answered how they usually ruminate or how they ruminated during the break. Furthermore, the study could have enhanced validity and reliability by using physiological measures against self-reported measures, such as cortisol secretion. Additionally, the current study relies on self-reported data, which is prone to certain pitfalls. People are often consciously or unconsciously biased when reporting; individuals are not always honest or capable of assessing themselves correctly, and individuals interpret questions differently. Furthermore, Likert scale responses might prompt people to score in the middle or in a certain pattern. However, there is no better way of assessing subjective recovery experiences and outcomes. In the present thesis, the self-report of experiences is subjective in nature, which should be regarded as representing actual thoughts or feelings. However, especially the three emotional measures have categorised items that could induce common-method bias. Nonetheless, the design is based on a mix of between- and within-person assessments, which reduces the potential effects of participant-dependent bias. Finally, the current research project collected trait positive and negative affect at baseline and state affect post-intervention. It was not the research question to examine the relationship between stable mood and tendencies towards being more prone to stress will have an impact on recovery. Therefore, we would recommend future studies to look at a possible interaction between trait affect, emotion-regulation and ego-depletion.

4.1.4 Recommendations for future research

Research on the possible effect of recovery activities during lunch breaks is in its infancy, and especially incorporating restorative environments to this field. To our knowledge, only two other study has tapped onto this concept (de Bloom et al., 2017; Sianoja et al., 2018). The current thesis goes even further, differentiating between several different recovery experiences and outcomes, as well as linking perspectives on ego-depletion to the recovery and restoration theories. Thus, this specific topic is a blank canvas, giving future research plenty of opportunities for exploration. However, it would be interesting to design experiments looking more into the specific value of walks with nature exposure as a recovery activity for employees that are high in fatigue and exhaustion. Furthermore, it is recommended that how employees usually spend their breaks should be carefully considered, not just controlling for the duration. The current study has found a trend towards a common theme of internal recovery from work, showing good effects of nature walks. However, this link could be even stronger in a sample

that is fatigued and exhausted. Last, but not least, the present study is the first to demonstrate that employees feel more vital and happy after walking outside in winter (i.e. snow). Thus, the specific effect of season would be interesting to incorporate into future projects, because little is known about the restorative effects of 'white' instead of 'green' nature.

5. Conclusion

The present thesis contributes the literature by combined theoretical frameworks from occupational health psychology, environmental psychology, as well as social psychology to establish the effects of walks with nature exposure and progressive muscle relaxation on internal recovery from work-related stress. Although the recovery activities were effective in some aspects of recovery experiences and outcomes, the effects were minor. The most promising findings is that participants in the walk condition experiences increased vitality and happiness after the intervention, suggesting that a short stroll during lunch breaks is a potential effective strategy. The present thesis is therefore demonstrating that a short walk in nearby surrounding during lunch break is a promising area for future research to focus on. Especially since employees generally experiences stress at work. Therefore, knowledge on how to quickly and inexpensively recover from work-related stress during internal breaks is desirable, both from the organizational perspective and employee well-being perspective.

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Appendices

Appendix A:

Tests of normality (i.e. skewness, kurtosis and Shapiro Wilk).

Skewness and Kurtosis for the Relax Group

	Pretest		Posttest	
	Skewness	Kurtosis	Skewness	Kurtosis
PA	-0.96	0.92	0.37	-0.43
NA	1.77	1.37	2.13	0.90
SVS	1.33	-0.29	1.21	0.08
ER	0.28	0.03	-0.54	-0.61
PD	-0.06	-0.10	-0.36	-0.08
AR	1.01	-0.06	1.08	0.80
Happy	-0.312	-0.443	-0.673	-1.315
Sad	0.42	-0.885	0.556	-0.515
Tense	0.078	-1.6	0.665	-0.597

Note. SVS = subjective vitality; AR = affective rumination; PA = positive affect; NA = negative affect; PD = psychological detachment, ER = ego restoration.

Skewness and Kurtosis for the Walk Group

	Pretest		Posttest	
	Skewness	Kurtosis	Skewness	Kurtosis
PA	-2.61	3.11	-0.41	-0.10
NA	0.76	-0.81	2.80	1.05
SVS	-1.81	0.99	-0.10	-0.55
ER	-1.00	1.18	0.39	-0.98
PD	0.51	-0.29	0.51	-0.97
AR	1.17	0.82	1.55	2.12
Happy	-0.814	-1.809	-0.784	-2.23
Sad	0.205	-1.093	0.132	-2.165
Tense	-0.433	-1.791	0.131	-1.284

Note. SVS = subjective vitality; AR = affective rumination; PA = positive affect; NA = negative affect; PD = psychological detachment, ER = ego restoration.

Shapiro-Wilks test of Normality

	Walk		Relax	
	Pretest	Posttest	Pretest	Posttest
PA	.90*	.98	.95	.97
NA	.96	.76*	.92	.88*
SVS	.92	.98	.92	.96
ER	.96	.95	.96	.94
PD	.95	.93	.97	.98
AR	.96	.94	.94	.95
Happy	.89*	.86*	.93	.94
Sad	.87*	.80*	.80*	.83*
Tense	.94	.91	.90*	.79*

Note. * $p < .05$. *Note.* SVS = subjective vitality; AR = affective rumination; PA = positive affect; NA = negative affect; PD = psychological detachment, ER = ego restoration.

Appendix B

Potential outliers in the sample based on mean minus trimmed mean and Z-score values.

Impact of Outliers (i.e. difference between mean & trimmed mean)

		Relax			Walk		
		Mean	5 % Trimmed Mean	Difference	Mean	5 % Trimmed Mean	Difference
Pre	SVS	19.58	19.23	0.35	17.63	17.82	0.19
	AR	10.95	10.83	0.12	12.84	12.71	0.13
	PA	33.41	33.68	0.27	31.99	32.44	0.45
	NA	15.51	15.28	0.23	18.94	18.77	0.17
	PD	11.33	11.25	0.08	11.00	10.94	0.06
	ER	12.16	12.18	0.02	12.68	12.82	0.14
	Happy	4.42	4.41	0.01	3.84	3.82	0.02
	Sad	1.79	1.71	0.08	2.47	2.41	0.06
	Tense	2.84	2.77	0.07	3.32	3.30	0.02
Post	SVS	18.53	18.20	0.33	21.11	21.17	0.06
	AR	11.53	11.31	0.22	12.42	12.19	0.23
	PA	28.89	28.72	0.17	30.06	30.18	0.12
	NA	12.37	12.08	0.29	13.15	12.72	0.43
	PD	12.63	12.70	0.07	13.42	13.41	0.01
	ER	9.74	9.71	0.03	12.00	12.00	0.00
	Happy	4.37	4.35	0.02	4.74	4.76	-0.02
	Sad	2.11	2.01	0.10	2.37	2.30	0.07
	Tense	2.47	2.30	0.17	2.95	2.89	0.06

Note. SVS = subjective vitality; AR = affective rumination; PA = positive affect; NA = negative affect; PD = psychological detachment, ER = ego restoration. Difference scores = Mean – Trimmed Mean.

Z-scores indicates no outliers for any of the dependent variables ($z < 3.29$)

Z-score		Minimum	Maximum
Pre	SVS	-2.31	1.90
	AR	-1.70	2.51
	PA	-2.90	1.73
	NA	-1.45	2.66
	PD	-1.71	2.03
	ER	-2.53	1.94
	Happy	-1.76	2.37
	Sad	-1.06	2.68
	Tense	-1.34	1.89
Post	SVS	-1.89	2.28
	AR	-1.76	2.75
	PA	-2.15	1.93
	NA	-1.01	2.60
	PD	-2.19	1.87
	ER	-1.62	1.74
	Happy	-2.09	2.00
	Sad	-0.89	2.00
Tense	1.05	2.64	

Note. SVS = subjective vitality; AR = affective rumination; PA = positive affect; NA = negative affect; PD = psychological detachment, ER = ego restoration.

Appendix C

Baseline and demographic differences between the groups.

Pearson Chi-square Tests (X^2) for demographic differences between Walk and Relax Groups

Measure	X^2	<i>p</i> -value
Age group	1.13	.57
Gender	0.49	.49
Job title	0.13	.72
Social factors	2.07	.15

Note. * $p < .05$; ** $p < .01$; M = mean; SD = standard deviation

*Independent Samples T-tests (*t*) for Walk vs. Relax Groups*

Measure	<i>t</i> -value	<i>P</i> -value	Walk		Relax	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Work hours ^a	-1.32	.20	7.95	0.49	7.64	0.88
Regular break ^b	0.83	.42	26.45	5.85	28.42	8.63
Intervention length ^b	-3.04	.05*	19.84	6.94	15.00	0.00

Note. * = significant results (equality not assumed).

a. Measured in hours

b. Measured in minutes

One-Way ANOVAs for all DVs between the Relax and Walk Groups

Measure	<i>F</i> -value	<i>p</i> -value	Relax		Walk	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive affect	0.37	.55	33.41	7.85	32.00	6.21
Negative affect	5.34	<.05*	15.51	3.20	18.94	5.48
Psychological Detachment	0.08	.78	11.33	4.28	11.00	2.62
Subjective vitality	0.92	.35	19.58	7.58	17.63	4.60
Ego restoration	0.15	.70	12.16	5.56	12.68	3.83
Affective rumination	2.82	.10	10.95	4.01	12.84	2.85
Happy	2.24	.14	4.42	1.17	3.84	1.21
Sad	4.23	<.05*	1.79	0.92	2.50	1.12
Tens	0.89	.35	2.84	1.54	3.32	1.55

Note. <.05* means significant results.

Appendix D

Results from univariate ANCOVAs for all DVs

ANCOVAs for all DVs with Pretest Scores as the Covariate

Recovery experiences & outcomes	<i>F</i> -value	<i>P</i> -value	Relax			Walk		
			<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
Positive affect	0.16*	.69	27.89	9.71	19	30.06	7.02	18
Negative affect	0.30*	.59	13.15	5.20	19	12.37	3.32	18
Psychological detachment	0.51*	.48	11.33	4.28	19	11.00	2.62	19
Subjective vitality	4.58***	.05	18,53	7.21	19	21.11	5.87	19
Ego Restoration	3.97***	.054	9.74	4.17	19	12.00	3.59	18
Affective rumination	0.58*	.45	11.53	4.27	19	12.42	4.21	19
Happy	4.70***	.04	4.37	1.34	19	4.74	1.22	19
Sad	0.07*	.79	2.11	1.20	19	2.37	1.38	19
Tense	0.19*	.67	2.47	1.84	19	2.95	1.39	19

Note. Significance at $p < .05$. Partial eta squared: *Small effect, **medium effect, ***large effect.

Appendix E

Statistics from Levene's test of equality of variances for mixed ANOVAs and ANCOVAs separately.

Levene's Test of Equality of Variances for mixed ANOVAs

	Pre		Post	
	Levene statistic	<i>p</i> -value	Levene statistic	<i>p</i> -value
Recovery experiences & outcomes				
Positive affect	0.56	.46	0.61	.44
Negative affect	5.51	.03*	1.70	.20
Ego restoration	0.34	.56	4.53	.04*
Affective rumination	1.84	.18	0.13	.91
Psychological detachment	3.14	.09	3.06	.71
Subjective vitality	3.84	.06	3.88	.06
Happy	0.37	.85	0.51	.48
Sad	0.83	.37	4.13	.05*
Tens	0.05	.83	1.66	.84

Note. **p* < .05.

Levene's Test of Equality of Variances for Univariate ANCOVAs

	Pre	Post
Recovery experiences & outcomes	Levene statistic	<i>p</i> -value
Positive affect	1.61	.21
Negative affect	3.39	.07
Ego restoration	6.08	.02*
Affective rumination	0.52	.48
Psychological detachment	2.70	.11
Subjective vitality	0.12	.50
Happy	0.37	.55
Sad	0.50	.49
Tens	0.05	.46

Note. **p* < .05.

Appendix F

Pearson's Bivariate Correlation for all DVs and potential confounding variables between walk and relax group separately. The last table shows the association between length of intervention and posttest DVs in the walk group (statistics not reported for the relax group, because the intervention length was constant).

Correlations between DVs, Usual Work Hours, & Normal Lunch Duration for the Walk Group

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Work hours														
2 Lunch break	.05													
3 PRE-PA	-.10	-.14												
4 POST-PA	-.27	-.17	.59*											
5 PRE-NA	.37	-.20	-.24	-.25										
6 POST-NA	.29	.25	-.28	-.26	.25									
7 PRE-ER	-.38	-.34	.48*	.26	-.01	-.63**								
8 POST-ER	-.12	-.71**	.39	.63**	.00	-.17	.34							
9 PRE-PD	-.15	.09	.05	.40	-.40	-.24	-.04	.22						
10 POST-PD	-.13	-.16	-.25	.44	-.13	-.16	-.19	.23	.47*					
11 PRE-VIT	-.35	-.56*	.66**	.51*	-.30	-.30	.55*	.66**	-.10	-.05				
12 POST-VIT	.33	-.28	.54*	.73**	-.40	-.32	.34	.66**	.40	.35	.50*			
13 PRE-AR	.28	.10	-.11	-.33	.45	.51*	-.38	-.28	-.58**	-.33	-.28	-.47*		
14 POST-AR	.37	.06	-.08	-.29	.29	.33	-.39	-.28	-.15	-.13	-.28	-.09	.64**	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Correlations between DVs, Usual Work Hours, & Normal Lunch Duration for the Relax Group

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Work hours													
2 Lunch break	-.33												
3 PRE-PA	.29	-.19											
4 POST-PA	.12	-.36	.56*										
5 PRE-NA	.00	-.04	-.14	-.10									
6 POST-NA	-.12	.13	.00	-.23	.69**								
7 PRE-ER	-.25	.38	.24	.25	-.02	.09							
8 POST-ER	-.38	.14	.09	.25	-.16	.07	.16						
9 PRE-PD	-.19	.04	.20	-.74	-.20	.34	.39	.51*					
10 POST-PD	-.28	.10	.09	.36	-.31	-.19	.43	.68*	.61**				
11 PRE-VIT	-.13	-.05	.73**	.65**	-.37	-.01	.35	.26	.25	.50*			
12 POST-VIT	.05	-.25	.44	.86**	-.29	-.32	.26	.53*	.07	.48*	.64**		
13 PRE-AR	.08	.26	-.12	-.13	.51*	.52*	.15	.05	-.06	.15	.10	-.19	
14 POST-AR	-.05	.43	-.06	.37	.34	.64*	.27	-.05	.25	.22	.16	-.42	.79*

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Pearson's Correlations for Emotions & other DVs in the Walk Group

Variable	Pre			Post		
	Happy	Sad	Tense	Happy	Sad	Tense
Happy						
Sad	-.55*					
Tense	-.18	.45				
Happy	.63**	-.43	-.21			
Sad	-.43	.56*	.40	-.78*		
Tense	-.24	.37	.62**	-.48*	.75**	
Work hours	-.23	.12	.42	-.26	.08	.30
Lunch break	-.40	.10	.05	-.28	.23	-.01
PRE-PA	.57*	-.45	-.14	.65**	-.62**	-.51*
POST-PA	.49*	-.23	-.32	.69**	-.53**	-.56*
PRE-NA	-.21	.57*	.58*	-.41	.49*	.57*
POST-NA	-.29	.30	.55*	-.26	.51*	.36
PRE-ER	.46	-.33	-.36	.35	-.43	-.32
POST-ER	.48*	-.25	-.10	.72**	-.44	-.22
PRE-PD	-.07	-.09	-.55*	.21	-.11	-.29
POST-PD	.25	.09	-.34	.24	-.05	-.08
PRE-VIT	.82**	-.65**	-.26	.71**	-.59**	-.34
POST-VIT	.44	-.45	-.40	.74**	-.64**	-.65**
PRE-AR	-.20	.41	.77**	-.25	.36	.46*
POST-AR	-.06	.73	.01	.53	.14	.47*

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Pearson's Correlations for Emotions & other DVs in the Walk Group.

Variable	Pre			Post		
	Happy	Sad	Tense	Happy	Sad	Tense
Happy						
Sad	-.28					
Tense	-.12	.21				
Happy	.57*	.02	.00			
Sad	-.55*	.17	.25	-.75**		
Tense	.06	.0	.52*	-.28	.36	
Work hours	-.01	.09	-.12	-.01	.06	-.24
Lunch break	-.27	-.17	-.03	-.28	.22	.24
PRE-PA	.73**	-.46	-.34	.19	-.47*	.02
POST-PA	.73**	-.21	-.02	.74*	-.75*	-.22
PRE-NA	-.28	.49*	.57*	.03	.04	.36
POST-NA	-.10	.32	.30	-.12	.24	.65**
PRE-ER	.29	-.36	.21	.13	.04	.22
POST-ER	.35	-.10	-.14	.26	-.23	-.14
PRE-PD	.16	-.23	-.25	-.11	.17	.01
POST-PD	.43	-.47*	.02	.18	-.13	-.01
PRE-VIT	.77*	-.37	-.26	.27	-.37	.17
POST-VIT	.76*	-.20	-.18	.73**	-.61*	-.32
PRE-AR	-.15	.01	.56*	-.24	.19	.68**
POST-AR	-.15	.11	.37	-.42	.40	.75**

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Pearson Correlation between intervention Length & Post Intervention DVs for the Walk Group

Variable	Happy	Sad	Tense	PA	NA	ER	PD	SVS	AR
Intervention Length	.21	-.19	.10	.04	-.13	.21	.39	-.08	-.13

Note. PA = Positive Affect; NA = Negative Affect; ER = Ego Restoration; PD = Psychological Detachment; SVS = Subjective Vitality; AR = Affective Rumination

Appendix G

Information sheet and consent form.

Vil du delta i forskningsprosjektet ”Jobbstress”?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å teste effekter av ulike tiltak som omhandler restituering og stressmestring på jobb. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Dette er et forskningsprosjekt, hvor deler består av en masteroppgave. Formålet med prosjektet er å undersøke stressmestring og opplevelser tilknyttet jobben. Ved å delta vil du potensielt få bedre stressmestring og innsikt i pågående forskningsprosjekt, samt et flaxlodd. Dataene i undersøkelsen vil brukes til én masteroppgave og publisering av forskningsartikler.

Hvem er ansvarlig for forskningsprosjektet?

Institutt for psykologi ved professor Leif W. Rydstedt er ansvarlig for prosjektet. Høgskolen i Innlandet er behandlingsansvarlig institusjon.

Hvorfor får du spørsmål om å delta?

Vi søker alle arbeidstakere som jobber i en kontorsituasjon ved Høgskolen i Innlandet.

Hva innebærer det for deg å delta?

Hvis du velger å delta i prosjektet, innebærer det at du setter av to lunsjpauser til å gå en tur på ca. 15-20 minutter og fyller ut 3 korte spørreskjemaer. Det første spørreskjemaet vil være litt lengre. Spørreskjemaene inneholder spørsmål om stressmestring, restituering og opplevelser. Dine svar fra spørreskjemaet blir oppbevart innlåst, og registreres kun elektronisk etter at de er anonymisert.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykke tilbake uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. En forskningsgruppe for miljøpsykologi ved Høgskolen i Innlandet vil ha tilgang til datamaterialet. Navn og kontaktopplysningene dine vil erstattes med en kodes som lagres på egen navneliste adskilt fra øvrige data. Navneliste og datamateriale vil oppbevares i papirformat og være innelåst. Alt datamateriale som registreres elektronisk vil være anonymisert og kan ikke spores tilbake til deg. Deltagerne vil ikke kunne gjenkjennes i publikasjon.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes 15 Mai, 2019. Personopplysninger vil makuleres ved prosjektslutt og datamaterialet vil bli anonymisert.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Høgskolen i Innlandet har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Institutt for psykologi ved Leif W. Rydstedt Leif.Rydstedt@inn.no.
- Vårt personvernombud: Hans Petter Nyberg Hans.Nyberg@inn.no
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17.

Med vennlig hilsen

Prosjektansvarlig
Leif W. Rydstedt

Masterstudent
Marin K. Henriksen

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet «*Jobbstress*», og har fått anledning til å stille spørsmål.

- Jeg samtykker til å delta i spørreundersøkelsen. Dette innebærer å svare på spørsmålene på de tre spørreskjemaene som blir utdelt.
- Jeg samtykker til å delta i de aktivitetene som er tilknyttet prosjektet. Dette innebærer å sette av to lunsjpauser til en aktivitet.
- Jeg samtykker til at mine personopplysninger behandles frem til datainnsamlingen er avsluttet, ca. 15 Mai 2019, og er kjent med at etter dette vil dataene være anonymisert.

(Signert av prosjektdeltaker, dato)

Appedix H

Pre-intervention questionnaire for both groups.

«Jobbstress» - spørreskjema del 1

Vennligst fyll inn følgende felter _____ med passende tekst og marker kun **én av boksene** med et **kryss** for hvert spørsmål. Alle spørsmål bør besvares etter instruksjonene som er gitt. Del 1 av spørreskjemaet fylles ut etter en vanlig lunsjpause og sendes med interpost til Leif Rydstedt i løpet av uke 8. Husk å ta vare på anonym ID koden du har fått.

A. FYLL INN:

ANONYM ID: _____

DATO: _____

ALDER: 35 år eller yngre Mellom 36-50 år 51 år eller eldre

KJØNN: Kvinne Mann Annet

JOBBTITTEL Fagansatt TA ansatt

HVOR MANGE TIMER JOBBER DU GJENNOMSNIITTLIG HVER DAG? _____ timer

HVOR LENGE VARER VANLIGVIS LUNSJPAUSEN DIN? _____ minutter

B. HVORDAN FØLER DU DEG VANLIGVIS?

Her er en rekke ord/uttrykk som beskriver ulike følelser. Les hvert ord/uttrykk, og kryss av for det svaralternativet som best beskriver hvordan du vanligvis (gjennomsnittlig) kjenner deg. *Ett kryss for hvert ord/uttrykk.*

	Jeg er vanligvis	Svært lite/ikke i det hele tatt	Litt	Middels	En del	Mye
		1	2	3	4	5
1.	Interessert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Nedtrykt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Opprømt/glad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Sterk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Opprørt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Skremt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Full av skyldfølelse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Iritabel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Årvåken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Skamfull	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Inspirert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Nervøs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	Bestemt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	Oppmerksom/Konsentrert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	Uvennlig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	Entusiastisk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	Stolt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	Skjelven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	Aktiv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	Redd	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. I FORHOLD TIL HVORDAN DU VANLIGVIS OPPLEVER DEG SELV; HVORDAN FØLER DU DEG AKKURAT NÅ?

Kryss av for hvordan du føler deg akkurat nå, altså i dette øyeblikket, på en skala fra 1-7 for hver påstand:

	<i>Svært uenig</i>						<i>Svært enig</i>
	1	2	3	4	5	6	7
1. Jeg har fått mer selvkontroll	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Jeg har fått mer viljestyrke	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg kjenner meg i bedre stand til å motstå fristelser dersom jeg skulle ønske det	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D. DIN OPPLEVELSE AKKURAT NÅ:

Kryss av for hvordan du føler deg akkurat nå, altså i dette øyeblikket, for hver av emosjonene på en skala fra 1-7.

	<i>Ikke i det hele tatt</i>						<i>Ekstremt/ svært mye</i>
	1	2	3	4	5	6	7
1. Glad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Trist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Anspent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E. PSYKOLOGISK AVKOBLING I LUNSPAUSEN

Følgende spørsmål handler om hvordan du generelt hadde det under lunsjpausen din i dag, med henhold til jobben din. Vennligst kryss av hvor passende følgende påstander er for deg på en skala fra 1-5:

I lunsjpausen...	<i>Helt uenig</i>	<i>Uenig</i>	<i>Verken uenig eller enig</i>	<i>Enig</i>	<i>Helt enig</i>
	1	2	3	4	5
1. Glemte jeg arbeidet mitt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Tenkte jeg ikke på arbeid i det hele tatt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Distanserte jeg meg fra arbeidsoppgavene mine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Fikk jeg en pause fra kravene arbeidet stiller.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F. AFFEKTIV GRUBLING

Følgende spørsmål omhandler om du grublet negativt over jobben i lunsjpausen din i dag. Vennligst avgjør hvor passende følgende påstander er for deg på en skala fra 1-5 ved å sette et kryss for hvert spørsmål:

	<i>Veldig sjeldent/aldri</i>	<i>Sjeldent</i>	<i>Noen ganger</i>	<i>Oftre</i>	<i>Veldig ofte/alltid</i>
	1	2	3	4	5
1 Blir du anspent når du tenker på arbeidsrelaterte saker i løpet av lunsjpausen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Blir du ergerlig av å tenke på jobbrelaterte saker når du har lunsj?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Blir du irritert av arbeidsproblemer når du har lunsj?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Blir du utmattet av å tenke på arbeidsrelaterte saker når du har lunsjpause?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Blir du bekymret av jobbrelaterte problemstillinger når du har lunsjpause?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

G. HVORDAN FØLER DU DEG AKKURAT NÅ?

Vennligst avgjør hvor passende følgende påstander er for deg på en skala fra 1-7 ved å krysse av ett kryss per påstand:

	<i>Svært uenig</i>					<i>Svært enig</i>	
	1	2	3	4	5	6	7
1 Jeg føler meg levende og vital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Jeg har energi og pågangsmot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Jeg føler meg våken og kvikk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Jeg føler jeg har fått mer energi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Jeg føler meg så levende at jeg vil boble over	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix I

Post-intervention questionnaire for the walk group.

«Jobbstress» - spørreskjema del 2 (gåtur)

Vennligst fyll inn følgende felter med passende tekst _____ og marker kun én av boksene med et kryss for hvert spørsmål. Alle spørsmål bør besvares etter instruksjonene som er gitt.

NB! Fylles ut rett etter aktivitet med den samme Anonyme ID koden som du brukte ved forrige spørreskjema.

A. FYLL INN:

ANONYM ID: _____

DATO: _____

HVOR LENGE VARTE TUREN I LUNSPAUSEN I DAG? _____ *Minutter*

BESKRIV OMGIVELSENE KORT MED EGNE ORD
(f.eks. bymiljø, parklignende, snø eller grønt, støynivå)

GIKK DU ALENE ELLER SAMMEN MED ANDRE?

- A. Var på tur alene
- B. Var på tur med én annen
- C. Var på tur med flere andre

G. AFFEKTIV GRUBLING

Følgende spørsmål omhandler om du grublet negativt over jobben i lunsjpausen din i dag. Vennligst avgjør hvor passende følgende påstander er for deg på en skala fra 1-5 ved å sette et kryss for hvert spørsmål:

	<i>Veldig sjeldent/aldri</i>	<i>Sjeldent</i>	<i>Noen ganger</i>	<i>Ofte</i>	<i>Veldig ofte/alltid</i>
	1	2	3	4	5
1 Blir du anspent når du tenker på arbeidsrelaterte saker i løpet av lunsjpausen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Blir du ergerlig av å tenke på jobbrelaterte saker når du har lunsj?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Blir du iritert av arbeidsproblemer når du har lunsj?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Blir du utmattet av å tenke på arbeidsrelaterte problemer når du har lunsjpause?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Blir du bekymret av jobbrelaterte problemer når du har lunsjpause?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix J

Post-intervention questionnaire for the relax group.

«Jobbstress» - spørreskjema del 2 (avslapning)

Vennligst fyll inn følgende felter med passende tekst _____ og marker kun **én av boksene** med et **kryss** ☒ for hvert spørsmål. Alle spørsmål bør besvares etter instruksjonene som er gitt.

NB! Fylles ut **rett etter aktivitet** med den samme Anonyme ID koden som du brukte ved forrige spørreskjema.

A. FYLL INN:

ANONYM ID: _____

DATO: _____

GJENNOMFØRTE DU ØVELSEN ALENE ELLER SAMMEN MED ANDRE?

- A. Alene
- B. Med én annen
- C. Med flere andre

B. HVORDAN FØLER DU DEG NÅ?

Her er en rekke ord/uttrykk som beskriver ulike følelser. Les hvert ord/uttrykk, og kryss av for det svaralternativet som best beskriver i hvordan du kjenner deg akkurat nå. *Ett kryss for hvert ord/uttrykk.*

Jeg er...		<i>Svært lite/ikke i det hele tatt</i>	<i>Litt</i>	<i>Middels</i>	<i>En del</i>	<i>Mye</i>
		1	2	3	4	5
1.	Interessert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Nedtrykt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Opprømt/glad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Sterk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Opprørt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Skremt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Full av skyldfølelse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Iritabel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Årvåken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Skamfull	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Inspiret	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Nervøs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	Bestemt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	Oppmerksom/Konsentrert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	Uvennlig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	Entusiastisk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	Stolt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	Skjelven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	Aktiv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	Redd	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. I FORHOLD TIL HVORDAN DU VANLIGVIS OPPLEVER DEG SELV; HVORDAN FØLER DU DEG AKKURAT NÅ?

Kryss av for hvordan du føler deg akkurat nå, altså i dette øyeblikket, på en skala fra 1-7 for hver påstand:

	<i>Svært uenig</i>						<i>Svært enig</i>
	1	2	3	4	5	6	7
1. Jeg har fått mer selvkontroll	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Jeg har fått mer viljestyrke	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg kjenner meg i bedre stand til å motstå fristelser dersom jeg skulle ønske det	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D. DIN OPPLEVELSE AKKURAT NÅ:

Kryss av for hvordan du føler deg akkurat nå, altså i dette øyeblikket, for hver av emosjonene på en skala fra 1-7:

	<i>Ikke i det hele tatt</i>						<i>Ekstremt/ svært mye</i>
	1	2	3	4	5	6	7
1. Glad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Trist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Anspent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E. PSYKOLOGISK AVKOBLING I LUNSJPAUSEN

Følgende spørsmål handler om hvordan du generelt hadde det under lunsjpausen din i dag, med henhold til jobben din. Venligst kryss av hvor passende følgende påstander er for deg på en skala fra 1-5:

I lunsjpausen...	<i>Helt uenig</i>	<i>Uenig</i>	<i>Verken uenig eller enig</i>	<i>Enig</i>	<i>Helt enig</i>
	1	2	3	4	5
1. Glemte jeg arbeidet mitt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Tenkte jeg ikke på arbeid i det hele tatt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Distanserte jeg meg fra arbeidsoppgavene mine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Fikk jeg en pause fra kravene arbeidet stiller.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F. HVORDAN FØLER DU DEG AKKURAT NÅ?

Vennligst avgjør hvor passende følgende påstander er for deg på en skala fra 1-7 ved å krysse av ett kryss per påstand:

		<i>Svært uenig</i>				<i>Svært enig</i>		
		1	2	3	4	5	6	7
1	Jeg føler meg levende og vital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Jeg har energi og pågangsmot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Jeg føler meg våken og kvikk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Jeg føler jeg har fått mer energi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Jeg føler meg så levende at jeg vil boble over	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

G. AFFEKTIV GRUBLING

Følgende spørsmål omhandler om du grublet negativt over jobben i lunsjpausen din i dag. Vennligst avgjør hvor passende følgende påstander er for deg på en skala fra 1-5 ved å sette et kryss for hvert spørsmål:

		<i>Veldig sjeldent/aldri</i>	<i>Sjeldent</i>	<i>Noen ganger</i>	<i>Ofte</i>	<i>Veldig ofte/alltid</i>
		1	2	3	4	5
1	Blir du anspent når du tenker på arbeidsrelaterte saker i løpet av lunsjpausen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Blir du ergerlig av å tenke på jobbrelaterte saker når du har lunsj?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Blir du irritert av arbeidsproblemer når du har lunsj?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Blir du utmattet av å tenke på arbeidsrelaterte problemer når du har lunsjpause?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Blir du bekymret av jobbrelaterte problemer når du har lunsjpause?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix K

Information provided to the relax group.

«Jobbstress» - informasjon

Kjære deltager,

Takk for at du gjennomførte del 1 av spørreskjemaet.

Del 2 av spørreskjemaet ligger vedlagt som PDF «*Spørreskjema jobbstress Relax*». Vi ber om at du svarer på spørsmålene rett etter at du har gjennomført aktiviteten og sender det med interposten til Leif Rydstedt (Internatet Storhove) senest Fredag 22 Mars.

Du skal i denne runden gjennomføre en avslapningsøvelse. Vennligst følg instruksjonene på videoen og gjennomfør hele seansen. Du står fritt til å velge når du ønsker å gjennomføre øvelsen (i løpet av uke 11 og 12) så lenge det er tilknyttet en lunsjpause.

Følg linken for å komme til videoen og følg instruksjonene. Det tar ca. 15 minutter.

<https://www.youtube.com/watch?v=ihO02wUzgkc>

Dersom du har noen spørsmål er vi tilgjengelig på stressforskning@inn.no

Mvh
Forskningsgruppen
v/ jobbstress

Appendix L

Information provided to the walk group.

«Jobbstress» - informasjon

Kjære deltager,

Takk for at du gjennomførte del 1 av spørreskjemaet.

Del 2 av spørreskjemaet ligger vedlagt som PDF «*Spørreskjema_jobbstress Tur*». Vi ber om at du svarer på spørsmålene rett etter at du har gjennomført aktiviteten og sender det med interposten til Leif Rydstedt (Internatet Storhove) senest Fredag 22 Mars.

Du skal i denne runden gjennomføre en gåtur utendørs i forbindelse med en lunsjpause. Du står fritt til å velge når du ønsker å gjennomføre øvelsen og om du ønsker å gjøre det sammen med andre, så lenge det er tilknyttet en lunsjpause (i løpet av uke 11-12).

Det er også opp til deg hvor du ønsker å gå, men vi ber om at du går mellom 15-20 minutter utendørs. Dersom du jobber på Storhove anbefaler vi følgende rute:

«Bruk gangstien under hovedveien ved sykkelstativene og ta til høye ut på gang og sykkelbane. Gå ca. 100meter og ta til venstre inn på Gamlevegen. Du kan enten gå opp til gården med det grå huset og snu, eller så kan du ta til venstre inn på sidevegen som går ned til den store brune gården. Følg deretter samme veg tilbake til Høgskolen»

Dersom du har noen spørsmål er vi tilgjengelig på stressforskning@inn.no

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