EMPLOYEE BURNOUT:

PREVENTION, RECOVERY, AND OUTDOOR THERAPY.

A SALUTOGENIC PERSPECTIVE.

Roald Martijn Pijpker

Propositions

1. Measuring recovery from a burnout using quantitative methods only is pointless.
   (this thesis)
2. Standardization of outdoor therapy for employee burnout in intervention protocols is useful.
   (this thesis)
3. The pressure for academics to continuously publish scientific output impairs opportunities to achieve meaningful societal impact.
4. Financial compensation for peer-reviewing articles hinders scientific integrity.
5. A crisis like the COVID-19 pandemic reconnects us with nature.
6. Obtaining a PhD degree requires pragmatic project management skills.

Propositions belonging to the thesis, entitled

Employee burnout: prevention, recovery, and outdoor therapy. A salutogenic perspective

Roald Martijn Pijpker

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Employee Burnout: Prevention, Recovery, and Outdoor Therapy

A Salutogenic Perspective

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A Salutogenic Perspective

Roald Martijn Pijpker

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Chapter I

General introduction

Introduction

The growing recognition of the importance of nature to human health and well-being has generated numerous scientific studies that provide evidence on a wide range of outcomes (Hartig et al., 2014). For example, living in greener urban areas has been associated with a lower probability of diabetes (Astell-Burt et al., 2014), hospitalization for asthma (Alcock et al., 2017), cardiovascular disease (Kardan et al., 2015), obesity (Halonen et al., 2014), and ultimately mortality (Gascon et al., 2016). According to a recent meta-analysis, exposure to natural environments results in significantly more stress reduction (e.g., lower cortisol and blood pressure) as compared to built environments (Twohig-Bennett & Jones, 2018; Yao et al., 2021). In addition to its effects on biomedical outcomes, exposure to nature can predict favorable levels of self-reported health (Maas et al., 2006), subjective well-being (Mitchell & Popham, 2007), and mental well-being (Mitchell et al., 2015). For example, one recent study reports that spending 120 minutes in nature per week is associated with good self-reported health and subjective well-being, regardless of how these hours of contact with nature are obtained (White et al., 2019). The health-promoting effects of nature are being increasingly used to prevent and treat mental health problems (Annerstedt & Währborg, 2011).

In Europe, sickness absence resulting from mental health problems poses a significant challenge to employees, employers, organizations, governments, and society (OECD, 2012). Of all work-related phenomena, burnout has been most consistently linked to adverse health and well-being in employees, with effects including increases in physical illness and musculoskeletal disorders (Appels & Schouten, 1991; Honkonen et al., 2006). Burnout also impairs the job satisfaction of employees and increases their intention to leave their jobs (Swider & Zimmerman, 2010; Alarcon & Edwards, 2011). Moreover, burnout is the most significant cause of sickness absence, inevitably leading to high replacement costs (Ahola et al., 2009; Ruitenburg et al., 2012; Salvagioni et al., 2017; Hassard et al., 2018). In the Netherlands, costs related to burnout have been estimated at €9,300 per employee, for a total of €3.2 billion total in 2019 (TNO, 2020). These expenses are expected to increase in the coming years (RIVM, 2018).

Before proceeding, it is important to explain how I defined burnout for the purposes of this thesis. Burnout entails "*a work-related state of exhaustion that occurs among employees, which is characterized by extreme tiredness, reduced ability to regulate cognitive and emotional processes, and mental distancing. These four core dimensions of burnout are accompanied by depressed mood as well as by non-specific psychological and psychosomatic distress symptoms*" (Schaufeli et al., 2020, p. 28). It is well known that burnout is caused primarily by job demands, such as workload, work pressure, role conflict, and role ambiguity (Lee and Ashforth, 1996; Alarcon, 2011), combined with a lack of job resources, like social support and autonomy, for coping with these

demands (Xanthopoulou et al., 2007; Lesener et al., 2019). Other contributors to the development of burnout include demands outside work or personal factors (e.g., low self-esteem). Over time, burnout leads to poor work performance and feelings of incompetence (Swider & Zimmerman, 2010).

In the Netherlands, when employees drop out of work, national rehabilitation guidelines emphasize facilitating the return to work (RTW) process and reducing burnout complaints via cognitive-behavioral therapies (CBT) and psychoeducation. To date, however, effectiveness evaluations have revealed that the results of such burnout-rehabilitation interventions have been suboptimal in terms of both reducing burnout complaints and facilitating the RTW process (Ahola et al., 2017; Perski et al., 2017). In addition, as suggested by de Vente and colleagues (2015), recovery from burnout complaints and RTW seem to be two relatively independent processes, both of which are poorly understood. In general, few theoretically grounded and evidence-based interventions have been designed and studied for employees with burnout (Hakanen & Bakker, 2016).

Preventive initiatives in nature and outdoor therapies for employees with burnout and evidence on their effectiveness are emerging (Annerstedt & Währborg, 2011; Sahlin et al., 2014; Sahlin et al., 2015; Grahn et al., 2017). For example, Cordoza and colleagues (2018) report that nurses who take daily breaks in gardens experience significantly fewer burnout complaints than do those who take daily breaks indoors. According to another explorative pre-test/post-test pilot study, therapy comprising walking and talking in nature reduces burnout symptoms in employees and improves their self-esteem, life satisfaction, work engagement, concentration, and general physical and mental health (Van den Berg & Beute, 2021). Moreover, providing therapy in the outdoors for employees on sick leave due to burnout significantly reduces their burnout complaints and provides some level of support to the RTW process, potentially even more so than traditional indoor therapy (Sahlin et al., 2015).

Study Aims and Research Questions

The developments and empirical insights that I discussed above suggest a need for greater understanding concerning the value of outdoor therapy for the recovery process after burnout. At the same time, however, research on and knowledge of the effects and mechanisms underlying the effectiveness of outdoor therapy for employees with burnout are still in the earliest stages (Annerstedt & Währborg, 2011). To address this gap in the literature, the overarching research aim of my thesis is *to examine the value of outdoor therapy for the recovery process of employees with burnout.* In this thesis, I defined outdoor therapy as the combination of providing psychological support and specific outdoor elements to facilitate the recovery process after burnout, guided by a licensed

practitioner (Annerstedt and Währborg, 2011; Cooley et al., 2020). The "outdoors" entails forests, city parks, plants, beaches, and other kinds of outdoor vegetation and natural environments that people generally encounter in everyday life.

My thesis covers two research phases. Any examination of whether and how outdoor therapy supports the recovery process after burnout first requires understanding how employees recover from burnout in general—a process that is poorly understood (Hakanen & Bakker, 2016). To this end, in the first research phase, I examine the burnout recovery process in general. In the second research phase, I subsequently investigate the value of outdoor therapy in facilitating this recovery process.

Research Questions for Phase 1: Only a few studies have explored the recovery process after burnout, each focusing on the experiences of participating in a specific burnout-rehabilitation intervention (Salminen et al., 2015). Given that existing rehabilitation interventions apparently yield suboptimal results in terms of reducing burnout and supporting the RTW process (Ahola et al., 2017; Perski et al., 2017), these studies can explain the burnout recovery process only in part. To date, no studies have examined the general experiences underlying successful recovery from burnout with a focus that extends beyond specific rehabilitation interventions. Despite the suboptimal effects of existing rehabilitation interventions, it would be worthwhile to explore the mechanisms that influence their effectiveness. In particular, systematic reviews have yet to focus explicitly on the effects and working mechanisms of rehabilitation interventions that address both employees and their working contexts. In the Netherlands, the prevailing rehabilitation guidelines (van Dam et al., 2017; van Dam, 2021) deem such combined (both person- and organization-directed) interventions crucial to burnout recovery and the RTW process. In the first phase of the research, I thus focus on the following research questions:

1a: How effective are existing combined burnout interventions?

1b: Which mechanisms influence the effectiveness of existing combined burnout interventions?

2: Which mechanisms explain a successful recovery after burnout?

Research Questions for Phase 2: Although empirical evidence is emerging to suggest that taking clients with burnout into nature can have positive effects, theories explaining how the combination of psychological support and outdoor-specific elements in outdoor therapy can trigger the recovery process after burnout are often lacking (Annerstedt & Währborg, 2011). In the second research phase, I thus focus on the following research questions:

3: How and to what extent does outdoor therapy builds on the mechanisms underlying successful recovery after burnout?

4a: What effect does outdoor therapy have on the recovery process of employees with burnout?

4b: Which mechanisms explain the effectiveness of outdoor therapy for employees with burnout?

Theoretical Approach

In this thesis, I integrate theories explaining associations between nature and health with pivotal theories used in health promotion to explain how therapy in nature can support recovery after burnout. More specifically, I use the conceptual model developed by Hartig and colleagues (2014) to explain pathways between nature, health, and well-being. I then use the theory of salutogenesis (Antonovsky, 1979; 1987) and attribution theory (Koelen & van den Ban, 2004) as a lens to unravel how outdoor therapy can support employees' ability and resources to recover from their burnout.

Associations between nature and health can be explained by four types of pathways: air quality, physical activity, social contacts, and stress (Hartig et al., 2014; Frumkin et al., 2017). The air-quality pathway assumes that nature supports health and well-being by reducing particulate matter and increasing ozone and aeroallergens (Hartig et al., 2014). The physical-activity pathway assumes that nature increases recreational walking, outdoor play, and other healthy activities. The social-contacts pathway elicits the positive effects of social contacts that nature may facilitate, including an increased sense of community (Hartig et al., 2014). The stress pathway assumes that nature has effects on health and well-being by reducing exposure to stressors and renewing coping resources, in addition to replenishing cognitive, affective, and physiological restoration (Hartig et al., 2014). Finally, contact with nature is likely to involve all these pathways simultaneously, resulting in a range of outcomes, both objective (e.g., lower cortisol levels) and subjective (e.g., improved mood) (Hartig et al., 2014). In this thesis, I assume that outdoor therapy supports recovery after burnout through these four pathways.

As I noted previously, examining whether and how outdoor therapy supports recovery after burnout requires first understanding successful recovery after burnout in general. To this end, I draw on the theory of salutogenesis, which aims to explain the causes of health instead of the causes of disease (Antonovsky, 1979; 1987). More precisely, it focuses on processes through which people can strengthen (or restore) their ability to identify and reuse resources within themselves (e.g., optimistic mindset), as well as within their immediate environments (e.g., social relations), to cope with stressors in ways that promote health (Lindström & Eriksson, 2010). From a salutogenic perspective, burnout can be defined as a stressor that impairs the ability of employees to participate and be productive in sustainable and meaningful ways at work (Vaandrager & Koelen, 2013). In this thesis, I focus on investigating mechanisms that enable employees to regain a sustainable and meaningful working life after burnout (Research Phase 1), as well as whether and how these mechanisms are supported by outdoor therapy (Research

Phase 2).

Before proceeding, I introduce the two salutogenic key concepts: generalized resistance resources (GRRs) and sense of coherence (SOC) (Antonovsky, 1979; 1987). Internal and external resources that can be used to cope with stressors are known as GRRs (Antonovsky, 1979). They can be material (e.g., money to ensure one's livelihood) or non-material (e.g., knowledge or skills) (Antonovsky, 1987). Important GRRs in the workplace include job control, social relations, and task significance (Vaandrager & Koelen, 2013; Pijpker et al., 2018). The ability to use (or reuse) GRRs is known as the SOC, which is a global life orientation that represents the extent to which people experience the world as comprehensible, manageable, and meaningful (Antonovsky, 1987). People with a strong SOC understand the stressors with which they are faced (*comprehensibility*, a knowledge component), feel that they possess the resources to cope with the stressors (*manageability*, a behavioral component), and have a strong sense that their lives have sufficient meaning to deal with the stressors (*meaningfulness*, an emotional-motivational component) (Antonovsky, 1993; Eriksson & Contu, 2022). Studies have consistently demonstrated that employees with strong SOC and GRRs experience fewer burnout complaints than employees with weak SOC and GRRs (Masanotti et al., 2020).

Empirical evidence is increasingly indicating that nature can restore chronic and temporally depleted GRRs (e.g., cognitive function) through the stress pathway (Hartig et al., 2014; Von Lindern et al., 2022). In this vein, outdoor therapy could potentially support and restore the GRRs and SOC of employees, thereby helping them to cope with a significant stressor like burnout. To constitute a GRR, however, a resource must be experienced as helpful for successfully coping with stressors (Lindström & Eriksson, 2010). The ways in which employees with burnout are able to identify and use GRRs are explored according to attribution theory (Koelen & van den Ban, 2004), which seeks to explain how and in which ways people process information in the attempt to understand, judge, and act upon events (Koelen & van den Ban, 2004).

For my thesis, understanding events refers to comprehending stressors and GRRs available within a given context (the *comprehensibility* dimension of SOC). Judging events refers to the extent to which people consider it worthwhile to identify GRRs for coping with stressors (the *meaningfulness* dimension of SOC). Acting on events refers to using GRRs to cope with stressors (the *manageability* dimension of SOC). Attribution theory augments salutogenesis, as it assumes that people attribute causes of events as being either in their control (i.e., occurring due to their own actions) or beyond their control (i.e., occurred due to the actions of others) (Koelen & Lindström, 2005). For example, employees could attribute their burnout to organizational culture—a stressor that is difficult to change. Through the stress pathway in outdoor therapy, however, employees may restore their cognitive functioning and develop strategies to help them cope with the fixed working environment. In that case, the restoration of cognitive

functioning and the development of coping strategies would be GRRs that employees could perceive as being within their own control for coping with a stable, external stressor. This would then contribute to life experiences that are comprehensible, manageable, and meaningful, thereby strengthening SOC (Koelen & Lindström, 2005).

Taken together, the theories I outlined above offer a coherent explanation of how outdoor therapy facilitates the recovery process of employees with burnout, with the four pathways theorized as enhancing both GRRs and SOC. For example, through the stress pathway, outdoor therapy can restore the cognitive functioning of employees and help them to feel relaxed, both of which are potential GRRs in the recovery process (Salminen et al., 2015). Likewise, the social-contacts pathway may enhance the feeling of social support, which can also be a GRR in the recovery process (Salminen et al., 2015). Finally, attribution theory sheds light on whether employees experience their stressors and GRRs as being within or outside their own control, thereby enhancing insight into the interplay between SOC and GRRs in the recovery process.

Thesis Outline

In **Chapter 2**, I present the study protocol, including a description of the methodological design used for data collection and analysis for each of the four research questions. **Chapter 3** explains the adaptations that had to be made to the study protocol as a result of constraints and opportunities emerging during the research project. I close this chapter by presenting the final methodological approach on which this thesis is based. In **Chapters 4, 5, and 6**, I present the results of three studies examining mechanisms that protect against the development of burnout and that underlie successful recovery after burnout (*Research Phase 1*). In **Chapters 7 and 8**, I present the results of developing and applying an evaluation model of outdoor therapy for employee burnout, with the goal of understanding whether and how this intervention can support recovery from burnout (*Research Phase 2*). Finally, in **Chapter 9**, I synthesize the findings of these studies to address the overarching research aim concerning the value of outdoor therapy to the burnout recovery process.

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2

Chapter 2

A salutogenic approach to understanding the potential of green programs for the rehabilitation of young employees with burnout: Protocol for a mixed method study on effectiveness and effective elements

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Abstract

Background: Burnout is the leading cause of absenteeism in the Netherlands, with associated sick leave costs amounting to around €1.8 billion. Studies have indicated that burnout complaints increased from almost 14.4% in 2014 to 17.3% in 2018, especially among employees between the ages of 18 and 35 years, and further increases are expected. Although there are many published articles on burnout, not much is known about what constitutes effective rehabilitation (i.e., the reduction of burnout complaints and the facilitation of returning to work). At the same time, multiple pilot studies have indicated that green programs are effective in both reducing burnout complaints and facilitating return to work. Green programs have been developed by professionals experienced in using the natural environment to facilitate rehabilitation (e.g., through green exercise and healing gardens). The literature nevertheless lacks comprehensive and contextual insight into what works and why.

Objective: The overarching aim of this study is to explore the potential of green programs for young employees with burnout. We present the study protocol from an ongoing research project consisting of 2 phases, each composed of 2 research objectives that sequentially build upon each other.

Methods: The study is based on a sequential design with four research objectives, using both qualitative and quantitative research methods. In the first phase, a systematic literature review (research objective 1) and in-depth interviews (research objective 2) will be used to explore mechanisms underlying the rehabilitation of young employees with burnout. In the second phase, a multicase study will be conducted to examine the extent to which green programs are built on mechanisms identified in the first phase (research objective 3). By employing a pre-test and post-test design, a specific green program that captures most of those mechanisms will then be evaluated on its effect and process with regard to the rehabilitation of young employees with burnout (research objective 4). The project started in June 2018 and will continue through June 2022.

Results: The first phase (research objectives 1 and 2) is intended to generate information on the mechanisms underlying the rehabilitation of young employees with burnout. The second phase (research objectives 3 and 4) is designed to demonstrate the extent to which and how the selected green program facilitates the rehabilitation of young employees with burnout.

Conclusions: Understanding how green programs can facilitate the rehabilitation of young employees with burnout complaints can help to address this societal issue.

Introduction

Work-related stress is the leading cause of absenteeism in the countries of the Organization for Economic Cooperation and Development (OECD) [1, 2], and it is accompanied by significant financial consequences for society [3]. The most significant occupational syndrome, burnout, has been shown to have an adverse effect on the health and well-being of employees (e.g., more physical illness), as well as on the organizations in which they work (e.g., less organizational involvement) [4]. In the Netherlands, burnout is the leading cause of absenteeism, with associated sick leave costs amounting to around €1.8 billion [5]. The prevalence of employees with burnout complaints has increased from 14.4% in 2014 to 17.3% in 2018 [6], especially among employees between the ages of 18 to 35 years [7]. Given that organizational development and performance are dependent on the health and well-being of employees [8], it is of the utmost importance to address the increase of burnout among young employees.

Burnout is defined as "*a work-related state of exhaustion that occurs among employees, which is characterized by extreme tiredness, reduced ability to regulate cognitive and emotional processes, and mental distancing. These four core dimensions of burnout are accompanied by depressed mood as well as by non-specific psychological and psychosomatic distress symptoms*" ([9], p. 30). In general, the development of burnout is fostered through a complex interplay of factors within employees (e.g., being a workaholic), factors within the organizational context (e.g., excessive workload) [10], and factors beyond the workplace (e.g., economic crisis) [11]. Little has been written, however, about the recent increase in burnout complaints among young employees.

The early 1970s witnessed the emergence of a booming burnout industry, consisting of programs focusing on employees (i.e., person-directed interventions) or organizations (i.e., organization-directed interventions) [4, 12, 13]. A further distinction can be made between programs aimed at reducing burnout complaints among employees who are still at work and interventions aimed at facilitating return to work (RTW) among employees who are currently not working due to burnout [4]. Systematic reviews and meta-analyses have focused on either person-directed or organization-directed interventions, indicating that the use of either of these types of interventions alone produces suboptimal results in terms of reducing burnout complaints and facilitating full RTW [14, 15]. Burnout programs that combine both person-directed and organization-directed interventions are more likely to be effective in facilitating rehabilitation. Reviews of such programs are nevertheless lacking.

At the same time, a growing body of literature suggests that nature offers opportunities for rehabilitation [16], here defined as developing the ability of young employees to participate and be productive in a sustainable and meaningful way [17]. Studies have demonstrated that experiencing nature can directly enhance physical and mental health, and that interacting with natural elements can develop well-being, while offering

opportunities for social interaction [18]. These empirical insights are increasingly being translated into "green programs" aimed at facilitating the rehabilitation of employees with burnout [19]. Little is known, however, about the extent to which green programs can facilitate rehabilitation for young employees with burnout.

Typical examples of green programs include green exercise [20] and healing gardens [21]. These programs differ in the extent to which nature is used, as well as in the ways in which nature is used [22]. One defining characteristic of green programs is that they are provided by professionals who are experienced in using nature to facilitate rehabilitation. Although the first pilot studies indicate that green programs can reduce burnout complaints and facilitate RTW [19, 20], not much is known about their effectiveness or underlying mechanisms. The aim of this study is, therefore, to explore the potential of green programs for the rehabilitation of young employees (18–35 years of age) with a burnout in the Netherlands.

Research Objectives

In this paper, we present the study protocol from an ongoing research project consisting of two phases, each proceeding from two research objectives that build sequentially upon each other. Before we can understand how green programs could facilitate rehabilitation among young employees with burnout, we must understand the mechanisms underlying such rehabilitation (Phase 1). The next logical step is to examine the extent to which green programs are built on those mechanisms and to evaluate a green program on its effect and process on young employees with burnout (Phase 2). In line with the overall research objective, the emphasis of this study lies in Phase 2. Given the limited knowledge about the rehabilitation of young employees with burnout, however, Phase 1 is of the utmost importance to the research project.

Phase 1

Research Objective 1. Systematic reviews and meta-analyses have focused on either person-directed or organization-directed interventions, each of which has proved suboptimal in promoting rehabilitation when used exclusively. The first objective of the current study is, therefore, to assess the effectiveness of existing combined rehabilitation programs, in addition to examining the mechanisms that influence their effectiveness.

Research Objective 2. The increase in burnout complaints among young employees is a recent phenomenon. It is, therefore, necessary to understand how young employees develop and recover from burnout. To this end, the second objective is to understand factors relating to the development of burnout and rehabilitation from burnout among young employees.

Phase 2

Research Objective 3. Although green programs are increasingly assumed to be effective in the rehabilitation of employees with burnout, the extent to which their initiators have built upon the mechanisms identified in Phase 1 is unclear. The third objective is, therefore, to describe green programs and examine the extent to which they are built on mechanisms underlying the successful rehabilitation of young employees with burnout.

Research Objective 4. To date, there is little understanding concerning the relative effectiveness of green programs in the rehabilitation of young employees with burnout, as well as with regard to the reasons underlying their effectiveness. To address this knowledge gap, the fourth objective of the current study is to evaluate the effect and process of a green program for young employees with burnout. The rationale for evaluating only one green program is that doing so can ensure the feasibility of the study, with a specific focus on a program that captures most of the mechanisms identified in the first phase.

Theoretical Framework

This study integrates theories that explain associations between nature and rehabilitation, in addition to drawing on pivotal theories used in health promotion.

Nature and Rehabilitation

Associations between nature and rehabilitation are assumed to be explained by four types of pathways: physiological, mental recovery, social, and psychological [16, 18]. The physiological pathway refers to the beneficial effects that being outside and physically active can have on physical well-being or other aspects [18]. The mental recovery pathway alludes to the effects that the "soft fascination" of being in nature can have on acute and chronic stress (e.g., improved mood) [18]. The social pathway elicits the positive effects of social contacts that nature may facilitate (e.g., a sense of belonging) [18]. The psychological pathway touches on the capacity of nature to serve as a mirror with which to reflect on concrete experiences (e.g., through the use of metaphors). These four pathways are intertwined. For example, acute or chronic stress can be alleviated by physical activity, in the same way, that having social contacts can influence reflection [16].

The Salutogenic Approach

This study adopts the salutogenic approach to investigate how the four pathways underlying green programs can facilitate rehabilitation. The salutogenic approach focuses on the processes through which young employees can strengthen (or restore) their capacity to identify and re-use resources within themselves (e.g., skills), as well

as within their immediate environments (e.g., social relations) to deal with stressors (e.g., daily hassles) [23]. In this regard, it complements pathogenic strategies aimed at eliminating or alleviating stressors in the workplace. Studies have demonstrated that enhancing resources and people's capacity to (re)use those resources can have more sustainable effects as compared to efforts aimed at eliminating stressors [23]. The salutogenic processes underlying this capacity depend primarily on environmental support for certain experiences [23]. The four pathways are likely to provide this support. For example, feeling physically and mentally well (i.e., the physiological and mental recovery pathways) are inherent resources that enable young employees to deal with stressors. For this reason, this study adopts the salutogenic approach as an overarching framework with which to examine how green programs can support the salutogenic process, thereby facilitating rehabilitation for young employees with burnout.

The resources that can be used to deal with stressors effectively are known as "generalized resistance resources" (GRRs) [24]. The ability to use (or re-use) GRRs is known as the "sense of coherence" (SOC), a global life orientation that represents the extent to which people experience the world as comprehensible, manageable, and meaningful [25]. Studies have indicated that GRRs maintain a reciprocal relationship with SOC. In other words, GRRs predict a high SOC, which in turn enhances the ability to identify and use GRRs [26]. Important GRRs in the workplace include job control, social relations, and task significance [27]. Job control is defined as an employee's decision-making authority, opportunities to use skills and knowledge, and opportunities to participate [17]. Social relations are defined as the extent to which individuals are able to count on information, assistance, support, and appreciation from their colleagues at work [17]. Task significance is defined as the perception that an individual's job has a positive impact on other people [17]. Although resources are not GRRs unless an employee can use them [23], this study uses these three GRRs and SOC as indicators of rehabilitation among young employees.

Research has consistently demonstrated that employees with a strong SOC experience fewer burnout complaints than do employees with a weak SOC [28]. Understanding the salutogenic process through which the four pathways can strengthen the SOC of young employees could therefore enhance insight into how green programs can facilitate their rehabilitation. However, little is known about this salutogenic process. It can nevertheless be explained by attribution theory [29], which is intended to explain how and in what way people process information in the attempt to understand events, judge those events, and act on those events [30]. Attribution theory is strongly related to the three dimensions of SOC – comprehensibility (understanding events), manageability (acting on events), and meaningfulness (judging events) [30, 31] – thus making it possible to study the development of SOC.

Taken together, the aforementioned theories offer a coherent framework with which to explain how green programs can facilitate the rehabilitation of young employees with

burnout (see Figure 2.1). As shown in the figure, the four pathways are likely to provide environmental support for certain experiences that can enhance the GRRs and SOC of young employees. For example, feelings of mental and physical well-being are inherently GRRs (mental recovery and physiological pathways), as is having social relations (social pathway). In addition, the psychological pathway can foster an employee's reflection on positive life experiences, with nature serving as a mirror. By reflecting on such experiences, young employees can shed light on exactly what has happened in terms of stressors and the GRRs at their disposal (Comprehensibility), in addition to understanding how they have taken action to use their GRRs (Manageability) and making sense of why dealing with those stressors was worthwhile (Meaningfulness). This salutogenic process is assumed to enhance both the GRRs and the SOC of young employees, thereby facilitating their rehabilitation.

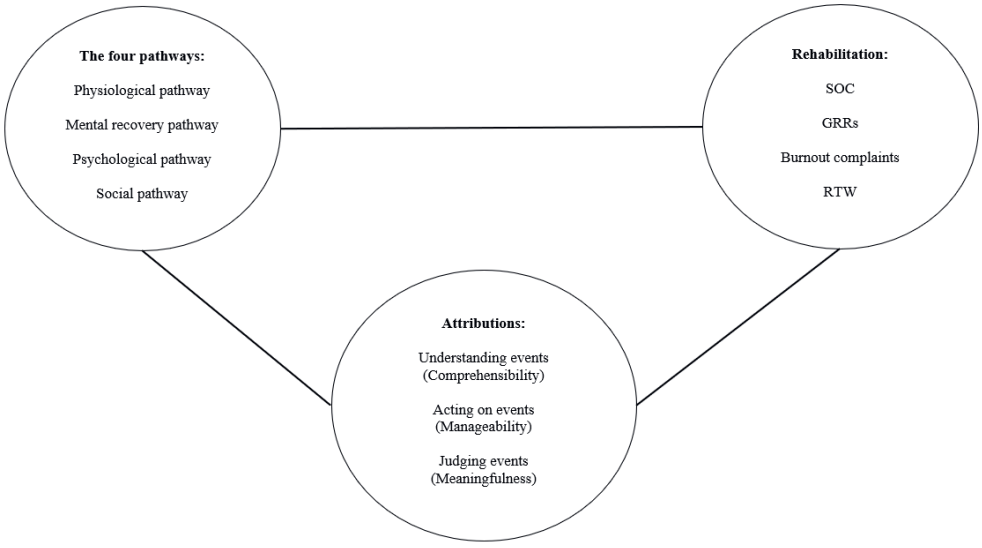

Figure 2.1. Conceptual framework. SOC: sense of coherence; GRR: generalized resistance resource; RTW: return to work.

Methods

Study Design

The current study is based on a sequential exploratory research design involving mixed methods – more specifically, a combination of qualitative and quantitative research methods [32]. In the following sections, the research methods and activities are explained for each research objective.

Methods and Activities for Phase 1

The first phase is intended to identify mechanisms underlying the rehabilitation of young employees with burnout. First, a systematic review will be conducted in order to assess the effectiveness of existing combined rehabilitation programs, as well as the factors underlying their effectiveness (Research Objective 1). Second, interviews with young employees will be used in order to investigate factors related to the development of burnout and rehabilitation (Research Objective 2).

Research Objective 1

Method

A systematic review will be employed according to the guidelines for Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) [33]. Details of the protocol for this systematic review have been registered on PROSPERO [34].

Activities

Seven electronic databases are searched: Psychology and Behavioral Sciences Collection; PsycARTICLES; Web of Science (all databases); Scopus; SocINDEX; PubMed; and PsycINFO. Search terms are based on the operationalization of burnout according to the most frequently used questionnaire for measuring burnout – the Maslach Burnout Inventory (MBI) – combined with "intervention." The inclusion period will be specified from 1970 to 2019. No other electronic search strategies will be employed, as the literature review will not include gray literature and non-peer-reviewed publications. The reference lists of the articles reviewed and the systematic reviews identified will also be searched for additional relevant studies.

Five inclusion and exclusion criteria will be applied to the studies identified through the search. First, only interventions that combine both person-directed and organization-directed approaches (e.g., cognitive-based therapy with interventions in the workplace) will be included. Second, studies that do not use the MBI to measure burnout will be excluded. Third, only experimental study designs will be included (e.g., cross-sectional studies will be excluded). Fourth, only studies focusing on employees will be included. Finally, only studies reported in English will be included.

We will use a descriptive narrative synthesis of the effects of the programs on burnout or RTW that are included, using summary data published in the articles. In addition, a detailed description of each study will be compiled, including participant characteristics, the theory and approach used, levels targeted, program content, and the duration and intensity of the program. All researchers will be involved in synthesizing the data and resolving any discrepancies.

Research Objective 2

Method

Twenty open semi-structured interviews will be conducted with young employees who have either been diagnosed with burnout or have successfully recovered from a diagnosed burnout. If needed, additional interviews will be conducted until data saturation is achieved. For the purposes of this study, successful recovery will be defined as full RTW, whether with the employee's current employer or with a new employer. A narrative inquiry approach will be used to investigate the mechanisms underlying the development of burnout in young employees and how their rehabilitation proceeded. Narrative inquiry is defined as systematically listening to people's life stories [35]. These stories will be elicited through timelines – an established research tool involving drawing and visually exploring life experiences [36]. The drawings and visually explored life experiences will then be used to structure the open semi-structured interviews. For example, participants will discuss and explain their timelines chronologically and describe life events and turning points with regard to the development of burnout and subsequent rehabilitation.

Activities

We will recruit young employees (18–35 years of age) who have either been diagnosed with burnout or have successfully recovered from a diagnosed burnout. As a criterion for inclusion, an employee's diagnosis must have been made by an occupational physician or general practitioner. As a criterion for exclusion, burnout must not have been a direct consequence of a psychiatric disorder (e.g., clinical depression), which can be ascertained according to the official process for diagnosing burnout in the Netherlands [37]. Participants will be recruited through social media (e.g., Twitter, Facebook) and the distribution of flyers about the study in the offices of occupational physicians and general practitioners, thereby enabling employees to contact the researchers directly for additional information concerning participation in the study.

Atlas ti.8 software will be used to analyze the data. All researchers will code the transcriptions of the qualitative data. Interview transcripts will be analyzed using interpretative phenomenological analysis, which takes the world of participants into account and analyzes the articulation of events, processes, and relationships [38]. Any lack of congruence will be discussed until an agreement is reached. Particular attention will be given to (a) stressors, (b) attributions, (c) GRRs, and (d) SOC.

Methods and Activities for Phase 2

The second phase is intended to examine the extent to which green programs are built on mechanisms identified in the first phase (Research Objective 3) and to evaluate a green program on its effect and process on young employees with burnout (Research Objective 4).

Research Objective 3

Method

A multiple case study will be used [39] to pursue this objective. Focus-group interviews with the initiators of green programs will be used to collect data contributing to the description of the green programs, complemented by individual open semi-structured interviews with initiators.

Activities

An inventory of green programs available in the Netherlands will be compiled in collaboration with several stakeholders involved in this project. As criteria for inclusion, a green program must target young employees with burnout and have been developed by practitioners with ample experience using nature to facilitate rehabilitation.

Using a purposive sampling strategy, a heterogeneous sample of a maximum of 10 green programs will be selected. Focus-group interviews with the initiators of green programs will be used to describe the programs, focusing on the following characteristics: underlying theoretical assumptions, methodologies used, program aims and content, processes, outcome measures, and follow-up. This information will be complemented by individual open semi-structured interviews with each of the same initiators.

Atlas ti.8 software will be used to analyze the data. The transcriptions of qualitative data will be coded by all researchers, informed by the mechanisms underlying rehabilitation, as identified in Research Objectives 1 and 2. First, a within-case analysis [38] will be conducted in order to obtain a thorough description of the development of the selected green programs. Second, a cross-case analysis [39] will be conducted in order to develop a comprehensive description of green programs and the extent to which they are built on the mechanisms underlying the rehabilitation of young employees with burnout, as identified in Research Objectives 1 and 2.

Research Objective 4

Method

A pre-test/post-test design will be used to conduct an effect and process evaluation of an existing green program aimed at the rehabilitation of young employees with burnout [29]. A pre-test (T0) measurement will be taken at the start of the green program, with the post-test (T1) measurement being taken after the program has ended. This information will be supplemented with an additional follow-up (T2) measurement. The emphasis of this study is on understanding the extent to which the green program to be selected is effective in promoting the rehabilitation of young employees, in addition to considering how and why the program did or did not work. The next logical step would be to compare the effect and process of this program to those of another rehabilitation program but doing so would be beyond the scope of the current study.

Although the selection of the green program will depend on the mechanisms

identified in Phase 1 and on the expert advice provided by the Advisory Board (see the Discussion section), the following three criteria have been pre-defined. First, the green program should be officially registered with the Dutch Association for Green Care Professionals [40]. In other words, it should be conducted by a registered coach or therapist with specific expertise in using nature to facilitate rehabilitation. Second, the green program should take place outdoors. In other words, it should involve allowing the participants to experience nature (e.g., walking outside while being coached) and to interact with its elements (e.g., shaping nature). For example, placing plants in the offices of young employees would not be considered as a green program. Finally, the duration and frequency of the green program should be substantial. For example, a green program that offers a single walk outdoors would not be eligible.

The experimental and control groups will consist of young employees with either burnout complaints or diagnosed burnout, who will then participate in the green program to be selected. The rationale for including young employees with burnout complaints is to ensure that the number of participants included will be sufficient to measure the effects on their rehabilitation. Participants in the experimental group will participate in the green program to be selected, whereas the participants in the control will not be enrolled in a green program. However, it is likely that young employees in both groups will take action by themselves to cope with their burnout complaints or diagnosed burnout. Therefore, this study will examine those possible coping strategies in both groups (see Activities) to better understand the effect and process of the green program.

To determine the number of participants in the experimental and control groups, formal sample size calculations will be employed using G*Power, version 3.0.10, based on one of the outcomes of rehabilitation: SOC, GRRs, RTW, or burnout complaints. The outcome used for the power calculation and the exact research design will be based on Research Objectives 1-3.

Activities

Young employees who have been diagnosed with burnout (as explained in Research Objective 2) will be recruited through physicians/general practitioners, as these employees are not currently working due to burnout. The recruitment of young employees with burnout complaints who are currently still working will be done in a similar manner (e.g., through social media and by placing flyers about the study in the offices of occupational physicians and general practitioners). In addition, employees will be approached through organizational newsletters in order to recruit young employees with burnout complaints who do not use social media.

The Burnout Assessment Tool (BAT) (33 items) is a reliable, validated Dutch questionnaire for measuring burnout complaints [9]. Although the MBI is the most frequently used questionnaire, it is subject to several conceptual, technical, and practical

imperfections [9]. In contrast, the BAT is assumed to be more versatile, and it can even be used to assess and monitor employees who are currently not working (e.g., within the context of RTW programs) [9]. Moreover, psychometric studies have demonstrated that the total score on the BAT can be used as an indicator of burnout [9].

The concept of SOC is easily applicable to workplaces. It will be measured using the Dutch version of the Orientation to Life Questionnaire (13 items) [41]. Given that SOC represents a global life orientation shaped by its three dimensions, the total SOC score will be calculated [40].

The Dutch versions of the Knowledge Intensive Working Environment Survey Target (KIWEST) and the second version of the Copenhagen Psychosocial Questionnaire II (COPSOQ II) have been validated to measure the three GRRs: job control (16 items), social relations (12 items), and task significance (3 items) [42, 43]. Each of these questionnaires assesses a broad range of psychosocial work factors, and neither is attached to any specific theory or model. The various subscales will be combined into three latent variables [26, 27]. The Causal Dimension Scale (CDS II) (12 items) will be used to measure the attribution styles of young employees, operationalized according to four dimensions: locus of causality, stability, personal control, and external control [31]. Because the questionnaire has not been validated in Dutch, it will be translated according to the cross-cultural adaption process [44]. Return to work (RTW) will be operationalized as the number of days until RTW or full RTW at follow-up.

The questionnaires selected for the effect evaluation are listed in Table 2.1. In addition to the instruments mentioned in the table, demographic information will be obtained through items concerning age, sex, country of birth, the highest level of education completed, and current (or previous) job. These data will be collected only at the T0-stage.

With regards to the effect evaluation, quantitative data will be assessed, particularly concerning the potential for bias due to non-response, the extent and pattern of missing data, and heterogeneity between groups [45]. The data will therefore be checked to determine whether non-response was related to gender, age, or other demographic variables, as well as whether any such associations could explain differences in response rates among the groups. The next step will involve assessing the psychometric properties of the data obtained by the instruments listed in Table 2.1 (e.g., internal consistency, based on Cronbach's alpha) and comparing them to the properties reported by their developers. The analyses will be performed using the IBM SPSS Statistics 24 software, based on descriptive statistics (e.g., means, frequencies, and one-way repeated-measures MANOVA) [45].

To better understand the extent to which the green program (to be selected) is effective in facilitating the rehabilitation of young employees with burnout, a process evaluation will be performed using open semi-structured interviews with the study participants and initiators of green programs. The interviews will emphasize how the

program has been executed, as well as mechanisms underlying how and why the program (see Figure 2.1) worked in relation to rehabilitation. Interviews will also be conducted with the study participants in the control group, in order to explore how they have coped with their burnout complaints or diagnoses.

For the process evaluation, the open semi-structured interviews will be recorded and transcribed verbatim. Atlas ti.8 software will be used to explore the perceptions of the participants with regard to the program and pathways. Any lack of congruence will be discussed with all researchers until an agreement is reached. The rationale for the process evaluation is that it will provide comprehensive and contextual insight into what works and why. This insight will be further enhanced by examining how other possible coping strategies of young employees in both experimental and control groups could have contributed to their rehabilitation.

Table 2.1. Questionnaires to be used for the effect evaluation.

Questionnaire	Reference	Captures	Domains	Likert scale
Burnout Assesment Tool	[9]	Burnout complaints	• Exhaustion • Mental distance • Emotional impairment • Cognitive impairment • Depressed mood	1-5
Sense of coherence-Orientation to Life Questionnaire	[41]	Comprehensibility, manageability, meaningfulness	• Manageability • Comprehensibility • Meaningfulness	1-7
Knowlegde Intensive Working Environment Survey Target (KIWEST)/ Copenhogen Psychosocial Questionnaire II (COPSOQ II)	[42,43]	Job control (GRR[a])	• Influence on work • Possibilities for development • Job autonomy • Illegitimate tasks	1-5
KIWEST/COPSOQ II	[42,43]	Social relations (GRR)	• Social support from supervisors • Social support from colleagues • Rewards • Social community at work	1-5
KIWEST/COPSOQ II	[42,43]	Task significance (GRR)	• Meaning of work	1-5
Revised Causal Dimension Scale II	[31]	Attribution style	• Locus of causality • Stability • Personal control • External control	1-9

Results

The project was funded in June 2018 and will continue through June 2022. This study protocol includes the methods and activities of four different studies that will build sequentially on each other. The first phase (Research Objectives 1 and 2) is intended to generate information on the mechanisms underlying the rehabilitation of young employees with burnout. The second phase (Research Objectives 3 and 4) is designed to demonstrate the extent to which and how the selected green program facilitates the rehabilitation of young employees with burnout. The first results are expected to be submitted for publication in 2020.

According to Dutch law, the research project requires formal ethical approval by the Social Sciences Ethics Committee (Wageningen University & Research). This approval was obtained on June 13, 2019. The activities associated with the fourth Research Objective require consent from the Medical Ethical Committee of Wageningen University, which will be requested during the third year of the project (2020/2021). It is not possible to apply for approval for this Research Objective at this stage of the project, as it builds on the information obtained through the other three Research Objectives. The required details of the experimental design for the fourth Research Objective are thus not yet available.

At every stage of the research, participants will be informed about the purpose and content of the study. Moreover, participation will always be voluntary, and participants will be able to withdraw from research activities for any reason at any time. Data confidentiality will be ensured by removing all personal information of the participants from the dataset.

Discussion

According to the Dutch Public Health Foresight Study, it is important to address burnout among young employees, as it is expected to increase further [46]. By examining mechanisms underlying the rehabilitation of young employees with burnout (Phase 1) and examining whether and how green programs facilitate rehabilitation among young employees (Phase 2), this study makes a direct contribution to addressing this societal problem.

Given that the BAT has not yet been used in evaluation research on burnout interventions, the systematic review (Research Objective 1) will be based on the MBI, as it continues to be regarded as the golden standard for measuring burnout. The effectiveness of the green program will be assessed according to the BAT, however, and this will also offer an opportunity to reflect on the validity and reliability of this instrument in intervention research.

A multi-case, multi-method design is proposed, including several green programs and using both qualitative and quantitative measures. Rather than examining pathways underlying green programs in isolation, this study adopts a salutogenic approach to exploring the interrelatedness between pathways. This will make it possible to examine the salutogenic mechanisms through which green programs provide environmental support for certain experiences that strengthen young employees' GRRs and SOC, thereby enhancing insight into how to facilitate their rehabilitation.

Although the salutogenic approach takes the specific work contexts of employees into account, green programs often do not target their daily work environment. The authors acknowledge that improving the working conditions and working environments of young employees is also important to facilitate their rehabilitation. Relatedly, it would be good to have green programs that could combine their approach with workplace interventions. Given the emphasis of this research project on exploring the potential of green programs for the rehabilitation of young employees with burnout, however, the evaluation of workplace interventions would exceed the scope of this study.

Finally, to enhance the feasibility of this study, an Advisory Board has been established, consisting of experts from multiple institutions [47]. The overarching aim of the Advisory Board is to discuss the research project in terms of both contents (e.g., the research design for Research Objective 4) and processes (e.g., the recruitment of participants for Research Objective 2). Meetings will be organized at least twice a year, thereby allowing the researchers to anticipate and address problems that could threaten the feasibility of the project.

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Authors' contributions: RP, LV, EV, and MK contributed to designing the study protocol. All authors are contributing to the implementation of the study. All authors commented on draft versions and approved the final manuscript.
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"Multimedia Appendix 1: [peer review reports + rebuttal letter]"

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3

Chapter 3

Intermezzo: Changes in the research design due to challenges and progressive insights

Introduction

In the previous two chapters, I described the knowledge gaps, research questions, theoretical framework, and research methods for the overall aim of examining the value of outdoor therapy for employee burnout. The research process is nevertheless inevitably susceptible to changes and adaptations, especially so for studies focusing on ongoing interventions in 'natural settings'. The changes and adaptations that I made to the research design and data-collection methods applied in this thesis were deemed important due to emerging challenges and progressive insights of the research team.

First, shortly after the research project was started, the Association for Green Care Professions collapsed for a variety of reasons. This association was to play an important role in the selection of the outdoor therapy intervention (in Chapter 2 referred to as "green programs"). Moreover, one of the selection criteria was that the outdoor therapists should be registered at the association (see Objectives 3 and 4 in Chapter 2). In close collaboration with the external advisory board, which included various stakeholders (e.g., occupational doctors and health promotion experts), I selected an outdoor intervention based on redefined selection criteria. *Second*, about halfway through the research project, I obtained a grant for a research internship at the Center of Salutogenesis in Zurich. More specifically, I used their expertise in effectiveness and process evaluations of complex interventions to develop an evaluation model of outdoor therapy for employee burnout. At the same time, I conducted a study at the Center focusing on the role of "off-job crafting" in preventing burnout during the COVID-19 crisis. This study directly complemented the first research phase of my project.

Third, unfortunately, it was not possible to conduct the pre-test/post-test design (see Objective 4 in Chapter 2) as planned due to the low enrolment of study participants. Instead of longitudinally measuring the effects of the outdoor therapy intervention, therefore, I employed a retrospective impact assessment focusing on how former clients with burnout perceived the impact of participating in outdoor therapy on their recovery process.

Finally, this thesis does not explicitly focus on "young employees" (between the ages of 18 and 35 years), as mentioned in the study protocol. Instead, to increase the feasibility of the project, it also includes older employees who had experienced burnout. In this chapter, I reflect on the changes that were made in relation to these four points. I conclude with an overview of the methodological approach on which this thesis is based.

I. Selection of the Outdoor Therapy Intervention

Directly after the research project was launched in 2018, the Association for Green Care terminated its existence for a variety of reasons. Active membership in this association

was one of the criteria for the inclusion of outdoor therapists, as specified in the original study protocol (see Chapter 2). In response to the collapse of the Association for Green Care, I organized a meeting with the members of the external advisory board to present the results of the first research phase, followed by a discussion about which outdoor intervention should be selected for the second research phase. The members of the advisory board identified two selection criteria as the most important for selecting the outdoor intervention. First, to ensure the proper diagnosis of burnout, the therapists should be trained as clinical psychologists. Second, to distinguish potential key elements of outdoor therapy that contribute to the burnout recovery process, the intervention should – to a certain extent – be standardized.

Based on these criteria, and after screening all outdoor therapists registered with the Association for Green Care, we selected *De Buitenpsychologen* as the pool from which to select therapists for the evaluation of the effectiveness and process of the outdoor intervention in the second research phase. De Buitenpsychologen is a growing network of approximately 50-80 traditional clinical psychologists who bring their clients into the outdoors to provide therapy. In addition, all of these therapists had been trained to provide treatment outdoors, based on an outdoor intervention protocol. In general, the therapists of this network fit perfectly within the selection criteria, as determined by both the research team and the external advisory board.

2. Research Internship at the Center of Salutogenesis

The research visit to the Center of Salutogenesis in Zurich had not been explicitly planned when the study protocol was written. At that time, however, I already knew that I wanted to visit the Center for my project, as their expertise in conducting effect and process evaluations of workplace interventions could enrich the second research phase of the research project. In particular, I found their Context, Processes, Outcomes (CPO) evaluation model (Fridrich et al., 2015) highly applicable for my project, as it offers a deductive frame for inductively unravelling the effects and processes of outdoor therapy for employee burnout. During a meeting of the Global Working Group on Salutogenesis in Wageningen in 2019, I was able to discuss opportunities for a research visit to the Center. Soon after this meeting, I developed a proposal for the research visit, which was reviewed, approved, and funded by the Wageningen School for Social Sciences.

In addition to developing the CPO evaluation model of outdoor therapy for employee burnout (See Chapter 7), the Center offered an option for examining how employees prevent the development of severe burnout complaints. Given that mechanisms preventing burnout can also play a role in the burnout recovery process, the following research question was added to the first research phase: *Which mechanisms*

in employees' non-working time protect employees against the development of burnout? More precisely, I focused on the role of the emerging concept of off-job crafting in preventing burnout during the COVID-19 crisis (See Chapter 4). Off-job crafting is defined as "*a motivated process including the goal-directed initiation of and engagement in crafting efforts intended to satisfy psychological needs*" (de Bloom et al., 2020, p. 1424). Based on an integrative review of 363 research articles, Newman and colleagues (2014) conclude that the following six dimensions of psychological needs are often satisfied during one's non-working time: detachment from work, relaxation, autonomy, mastery, meaning, and affiliation (the "DRAMMA" model), thereby representing the six off-job crafting dimensions (de Bloom et al., 2020).

To answer the research question, my colleagues and I used a longitudinal research design, comprising one wave collected before the onset of the pandemic (March 2019) and one wave collected during the first lockdown of the crisis (April 2020). A questionnaire was used to measure the six dimensions of off-job crafting (Crafting for Detachment, Relaxation, Autonomy, Mastery, Meaning, and Affiliation) and burnout (fatigue/exhaustion) among German and Swiss employees (N = 658).

Insight into the mechanisms that underlie burnout prevention could potentially enhance the understanding of whether and how outdoor therapy supports recovery for employees with burnout. For example, as reported in a study by Van den Berg and Beute (2021), outdoor therapy can provide clients with rest and relaxation, which relates to off-job crafting for relaxation. In addition, clients reported that nature had changed their views on reality and enhanced the acuity of their thinking, which taps into off-job crafting for meaning and mastery.

Finally, the research internship at the Center of Salutogenesis resulted in strong relationships with colleagues at the Center. Moreover, after finishing my internship, the head of the Center (Prof. Dr. Georg F. Bauer) was added as a co-promotor to my supervision team. This collaboration allowed me to continue using his expertise and experience to develop and apply the CPO evaluation model of outdoor therapy for employee burnout.

3. From Pre-test/Post-test to Retrospective Impact Assessment

A pre-test/post-test design was deemed most appropriate for measuring the effect of outdoor therapy on the recovery process for employees with burnout (see Objective 4 in Chapter 2). Ideally, one group of clients with burnout would participate in the outdoor therapy intervention. Their results would be compared to those of a control group of employees with burnout who had not participated in any intervention (e.g., employees on a waiting list). The validity and reliability of this type of approach are commonly known to be considerably strong (Koelen & van den Ban, 2004). Unfortunately, many

practical challenges prevented me from finding a sufficient number of participants. Despite all efforts (e.g., preparing detailed information leaflets about the study for therapists and their clients), no participants were found.

To identify and analyze the reasons underlying the failed recruitment process, I called and emailed participating outdoor therapists with the request to share their observations. The following reasons were identified:

1. The plan to ask therapists to approach their clients about participation was overly optimistic, considering their busy schedules.
2. Burnout is partly characterized by cognitive and emotional dysregulation, which could potentially impede clients from completing extensive questionnaires or participating in interviews.
3. The recruitment process was also not supported by the COVID-19 pandemic and the associated lockdowns (during which the research was conducted). For example, the recruitment process took place during a full lockdown, in which people were asked to stay at home as much as possible.
4. It seemed more preferable to include everyone who was willing to participate in an intervention group than to arrange for a control group instead.

Rather than measuring the effect of outdoor therapy on the burnout recovery process longitudinally, I performed a *retrospective impact assessment* (Randall et al., 2005). More precisely, I focused on former clients who had completed all outdoor therapy sessions. Following Nielsen and Randall (2012), quantitative measurement of the *perceived impact* of the outdoor therapy intervention as a whole, as well as of its core elements, can be used to assign former clients to certain groups retrospectively. For example, former clients who perceived that the intervention elements had a high impact on their recovery and those perceiving that this impact had been low could serve as two separate groups for comparison. Qualitative interviews could then be used to investigate why some clients reported perceiving high or low outcomes and explore which elements had played a role according to their experiences. Given its exclusive focus on clients who have recovered from burnout, this approach inevitably leads to selection bias. Considering that the overall aim of my thesis is to examine the value of outdoor therapy for employee burnout, however, this approach was deemed to offer a valid and reliable alternative method.

4. From Young Employees to All Employees

A final change to be addressed concerns the focus on young employees between the ages of 18 and 35 years old. The focus on young employees was a central feature of

the study protocol, as burnout is becoming increasingly common within the younger working population. In practice, however, only one of the five studies focused primarily on young employees (see Chapter 6), whereas the other four studies also included older employees. The reason for including more senior employees as well was to ensure a sufficient number of study participants. Although this decision eliminates the possibility of drawing any firm conclusions about the effectiveness and process of outdoor therapy on the recovery process of young employees with burnout, the results do allow me to address the main objective of examining the value of outdoor therapy for employee burnout in general.

Final Methodological Approach

Taking into account the changes and adaptations discussed above, my thesis builds on a mixed-methods triangulation design (Creswell, 2014), in which both quantitative and qualitative data-collection tools were used to answer the research questions (see Table 3.1). More specifically, I employed longitudinal quantitative questionnaires (Research Question 1), a systematic literature review (Research Questions 2a and 2b), in-depth life-course interviews (Research Question 3), qualitative semi-structured interviews and content analysis (Research Question 4), and a quantitative and qualitative retrospective impact assessment (Research Questions 5a and 5b). As emphasized by Creswell (2014), the strength of the triangulation design is that it ensures the collection of varied but complementary data on the same topic, while combining the strengths of both qualitative (e.g., in-depth analysis) and quantitative (e.g., large *N*) methods with non-overlapping weaknesses. This approach made it possible to create a holistic picture of the value of outdoor therapy for the burnout recovery process.

Table 3.1. Overview of research phases, research objectives, research questions, and methods.

Research Phase	Research Objective	Research Question	Methods	Chapter
		Burnout prevention		
	1a	Which mechanisms in employees' non-working time protect employees against the development of burnout?	Questionnaire; longitudinal design	4
		Burnout recovery		
1 Developing a Burnout Recovery Model	2a	How effective are existing combined burnout interventions?	Literature review	5
	2b	Which mechanisms influence the effectiveness of existing combined burnout interventions?	Literature review	5
	3	Which mechanisms explain a successful recovery after burnout?	In-depth interviews; interpretative phenomenological analysis; timelines	6
		Outdoor therapy for employee burnout		
2 Evaluating Outdoor Therapy for Employee Burnout	4	How and to what extent does outdoor therapy builds on the mechanisms underlying successful recovery after burnout?	Semi-structured interviews; content analysis; case study design	7
	5a	What is the perceived impact of outdoor therapy on the recovery process of employees with burnout?	Questionnaire; retrospective impact assessment	8
	5b	Which mechanisms explain the perceived impact of outdoor therapy on the recovery process of employees with burnout?	Semi-structured interviews	8

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4

Chapter 4

The role of off-job crafting in burnout prevention during COVID-19 crisis: A longitudinal study

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Abstract

The COVID-19 pandemic and remote working challenge employees' possibilities to recover from work during their off-job time. We examined the relationship between off-job crafting and burnout across the COVID-19 crisis. We used a longitudinal research design, comprising one wave collected before the onset of the pandemic in March 2019 (T1) and one wave collected during the first lockdown of the crisis in April 2020 (T2). We measured the six off-job crafting dimensions (Crafting for Detachment, Relaxation, Autonomy, Mastery, Meaning, and Affiliation) and burnout (fatigue/exhaustion) via a questionnaire among German and Swiss employees (N = 658; Age M = 47; 55% male). We found that both burnout levels and crafting for affiliation significantly decreased at T2 compared to T1. All off-job crafting dimensions and burnout correlated negatively cross-sectionally and longitudinally. Regression analyses showed that employees who crafted in their off-job time before and during the crisis experienced fewer burnout complaints during the crisis. Looking more closely at the subdimensions of off-job crafting, employees who crafted for detachment before and during, and for affiliation before the crisis, reported less burnout during the crisis. We conclude that off-job crafting may act as a buffer mechanism against burnout during the COVID-19 crisis.

Introduction

The continuing global COVID-19 pandemic and the related control measures seriously challenge employees' ability to maintain their health while staying productive at work [1,2]. The pandemic affects employee health through direct pathways (e.g., via the fear of being affected by the virus in high-exposure occupations) and indirect pathways (e.g., via the fear of being economically affected by the measures to control the pandemic), resulting in mental health complaints and stress symptoms [3]. Moreover, a report published by Eurofound [4] showed that even employees who have experienced some improvements in their work situation after lifting the first lockdown (e.g., getting back to full working hours) still report high levels of work-related stress. In addition, research on teachers, a group frequently studied in burnout research, revealed that perceived threats due to work-related changes during the COVID-19 pandemic were related to higher burnout levels [5]. Besides its markedly adverse effects, the ongoing COVID-19 pandemic offers an excellent opportunity to increase our understanding of how employees recover from work stress in their non-working time before and during crisis situations, which may buffer the effects of the crisis on burnout complaints—a key predictor of adverse workplace health and well-being outcomes [6–10].

Based on a longitudinal study design, comprising one wave collected before the onset of the pandemic and one wave collected during the crisis, the present study examines the role of off-job crafting for burnout prevention in times of the COVID-19 pandemic. Insights into the potential role of off-job crafting may support the work of health-promotion practitioners and policymakers in enabling the workforce to develop and maintain optimal levels of health and well-being during public health crises situations.

Off-Job Crafting for Better Recovery from Work

Adaptive strategies to cope with highly demanding work can be classified into three types [11,12]: (a) dealing with depleted resources (e.g., coping strategies, recovery); (b) altering job characteristics (e.g., job crafting); and (c) work and non-work boundary management (e.g., segmentation). Off-job crafting belongs to the first category as it enables restoration of depleted resources during non-working time and employees' capacity to cope with workplace stressors successfully, thereby preventing negative effects of job demands on employee burnout. Off-job crafting refers to employees' proactive and self-initiated changes in their non-working lives to satisfy their psychological needs [13,14]. According to the identity-based integrative needs model of crafting, the satisfaction of psychological needs is understood as the core driver and result of crafting [15]. The needs addressed in off-job crafting are defined by the DRAMMA model [14], an acronym that stands for the six needs (Detachment, Relaxation, Autonomy, Mastery, Meaning, and Affiliation). Engaging in activities that lead to the satisfaction of these needs during non-working time may also alleviate burnout complaints. Based on Kujanpää et

al. [13] and the groundbreaking work by recovery researchers such as Sonnentag and Fritz [16], *detachment* is defined as "switching off" from one's thoughts related to work and tasks during off-job time. Aligning with the stressor–detachment model, crafting for psychological detachment such as purposefully "refraining from job-related activities and thoughts during non-work time" can reduce the effect of job stressors during the non-work time [17]. Off-job crafting for *relaxation* encompasses proactively striving to feel physically well and reducing effortful activities. It has been found that strain, representing a lack of detachment and relaxation from work, predicted higher levels of burnout and lower life satisfaction [13,17]. Off-job crafting for *autonomy* reflects striving for a feeling of being in control over one's actions, life, and choices. Off-job crafting for *mastery* refers to behaviors aiming for feelings of proficiency and skillfulness in the task in which employees engage, such as taking up pleasant challenges and learning opportunities. Off-job crafting for *meaning* taps into striving for the experience of a sense of purpose and significance in one's life and activities. Finally, off-job crafting for affiliation refers to aiming for the experience of being closely related and emotionally connected to others.

Before the onset of the COVID-19 crisis, studies showed that the recovery experiences of detachment, relaxation, and mastery were negatively associated with burnout [16]. More recently and related to the previous study, research indicated that all six DRAMMA dimensions had strong, negative associations with work-related stress [13]. Another study indicated negative associations of the general off-job crafting factor with burnout over a three-month time period [16,18]. These effects are indicative of spillover effects between life domains [19] when people craft during leisure time, and this can have an impact on well-being at work. Overall, earlier studies support the notion that off-job crafting could be a helpful and relevant proactive strategy for preventing burnout under changing living and working conditions such as the COVID-19 pandemic. Employees may proactively craft their off-job time when not demanded by work [20] and experience positive spillover in terms of better detachment and recovery, which prevents them from developing burnout symptoms in the long term. We, therefore, assume that off-job crafting can potentially reduce exhaustion and fatigue, as covered in the burnout concept.

Burnout

Following Kristensen et al. [21], we define burnout as the degree of physical and psychological fatigue and exhaustion that is perceived by the person concerning their work. In everyday working life, it is well established that burnout is closely associated with various work-related and non-work-related health and well-being outcomes [6–10]. For example, burnout leads to adverse physical (e.g., musculoskeletal pain, severe injuries, type 2 diabetes), psychological (e.g., insomnia, depressive feelings, anxiety), and occupational (e.g., high sick leave costs, lower job performance, job dissatisfaction)

consequences [22]. Burnout is often the result of high job demands, in particular, role stress, stressful events, role ambiguity, role conflict, and work pressure [23,24]. These demands are particularly harmful when job and personal resources, such as social support, autonomy, and self-efficacy, are lacking [25,26]. Consequently, employees become chronically exhausted and psychologically distance themselves from their work, thereby impairing feelings of meaningfulness and the fulfillment of inherent psychological needs [27]. Since the onset of the pandemic, the role of employees' non-working lives has played an important role in maintaining their (workplace) health and well-being. For example, a recent cross-sectional study conducted by Tusl et al. [2] showed that employees who experienced the changes after the pandemic hit as positive, such as having more leisure time, reported higher levels of mental well-being and self-related health than employees who experienced these changes as negative.

Besides the important role of reducing job demands and strengthening job resources in burnout prevention in general [28], employees are not passive agents undergoing a crisis. They can employ adaptive regulation strategies to prevent or diminish the onset of burnout complaints [29]. Although adaptive strategies for burnout prevention have received more attention recently within employees' working life [28], little research exists for such proactive strategies within non-working life [29]. Crafting the non-work life domains is a promising stream of research still in its infancy [29,30]. It is therefore important to explore the role of off-job crafting as a possible pathway for alleviating burnout complaints in crisis situations.

Study Aims and Research Questions

In an effort to expand prior studies, the present study aims to understand (1) the impact of the COVID-19 crisis on off-job crafting and burnout and (2) to examine cross-sectional and longitudinal relationships between off-job crafting and burnout before and during the pandemic. Thereby, this study provides new insights into the extent to which people proactively craft their non-working life in a way that potentially protects against burnout. Since this study draws on longitudinal data collected before (T1) and during the crisis (T2), knowledge will be gained on how employees cope during and beyond crisis situations via off-job crafting, which is also little understood. Therefore, we focus on the following explorative research question:

Research Question 1: To what extent do both burnout and off-job crafting change during the COVID-19 crisis (T2) compared to before the crisis (T1)?

As the pandemic is unprecedented in modern working life and the impact of telework on a massive scale has neither been investigated with regard to burnout nor off-job crafting, this research question is explorative. Earlier research has shown that burnout levels can rise during a crisis due to, for example, increasing levels of job demands, lowering levels of job resources, and rising levels of job insecurity [31]. On the other hand, telework may also provide resources to people, such as enhanced autonomy, social

support, and increased self-discipline [32]. In a drastically changing work and private life situation, crafting may be required in order to cope with these new challenges. However, people may also struggle and feel that they lack the personal resources to invest in crafting efforts, which may reduce actual crafting behaviors, similar to the recovery paradox [33]. The recovery paradox describes a situation in which workers find it particularly hard to recover during times of high job demands and work stress—a situation in which recovery is most needed.

Regarding the relationship between off-job crafting (i.e., crafting for DRAMMA) and burnout, based on the above literature review, we propose the following explorative research questions:

Research Question 2: To what extent is off-job crafting (i.e., the total concept and the six subdimensions) related to burnout?

(*2a*) Cross-sectionally (i.e., How is off-job crafting at T1 and T2 associated with burnout at T1 and at T2, respectively?);

(*2b*) Longitudinally (i.e., How is off-job crafting at T1 associated with burnout at T2?)

Finally, we explore whether off-job crafting before and during the crisis can predict changes in burnout during the crisis and how off-job crafting during the crisis is related to burnout during the crisis:

Research Question 3a: To what extent is off-job crafting (i.e., the total concept and the six subdimensions) before the COVID-19 crisis (T1) related to a change in burnout during the crisis (burnout at T2 controlled for burnout and off-job crafting at T1)?

Research Question 3b: To what extent is off-job crafting (i.e., the total concept and the six subdimensions) during the COVID-19 crisis (T2) related to burnout during the crisis (burnout at T2 controlled for burnout at T1)?

Following earlier research on the beneficial effects of crafting and its importance for recovery, we expect that off-job crafting can act as a buffer that can prevent increasing burnout complaints during the COVID-19 crisis.

Methods

Participants and Procedures

A prospective longitudinal design was employed among employees in Germany and Switzerland, comprising two waves of measurements with a one-year time interval between the waves. As a baseline to compare the situation before the outbreak of COVID-19, we use a wave collected in March 2019, constituting the baseline measure (T1). The second wave was collected during the first lockdown in April 2020 to reflect the COVID-19 crisis (T2). Participants were recruited via Respondi (respondi.com), which is a high-quality panel provider based in Germany. Hence, the data allow us to

follow the same participants throughout both waves, covering up to 12 months before the COVID-19 outbreak (T1) and the peak of the COVID-19 lockdown measures (T2). Only employees within the age range of 18 to 65 years who worked more than 20 h per week were included, excluding self-employed people. Participants were from a range of occupational sectors, including the health and social sector, public sector, sales, agriculture, production of goods, information and communication, finance, research, education, hospitality, transport, and construction.

The full sample collected in the first wave included $N = 1501$ participants, of which those who participated in the second wave $N = 658$ participants (44% participation). Men were more likely to participate in both waves, with 55% of those who participated in both waves being male compared to 51% of those who participated in the first wave only. However, the difference in proportions was not significant $\chi^2(1) = 2$, $p = 0.157$. Participants responding to both waves were significantly older, with a mean of 47 years compared to a mean age of 44 years in the first wave, $t(1386) = -4.96$, $p < 0.001$. No significant differences were found in the study variable of burnout and off-job crafting between those who participated in both waves and those who participated in the first wave only. The total paired sample was $N = 658$. The vast majority of the respondents were German (85%), whereas a minority of the sample was of Swiss nationality (15%). Most of the respondents finished their secondary school (63%), followed by tertiary (30%) and primary (7%) education. Concerning gender, about half of the sample were men (55%) and women (45%).

Measures

Work-Related Burnout. The seven-item measure from the original 19-item Copenhagen Burnout Inventory was used [25]. Items were answered on a five-point scale from 1 = "never/almost never" to 5 = "very often". All items captured the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to their work; for example: "do you feel burnt out because of your work?". One item was recoded so that a higher score indicates higher levels of burnout. The scale showed good reliability before ($\alpha = 0.89$) and during ($\alpha = 0.87$) the crisis.

Off-Job Crafting. The 18-item version of the Needs-based Off-job Crafting Scale (NOCS) was used to measure off-job crafting over the past month, comprising the following six dimensions: detachment, relaxation, autonomy, mastery, meaning, and affiliation [13]. All items measured the extent to which people restore their psychological needs in their non-working life on a five-point scale from 1 = "never" to 5 = "very often". A sample item reads: "I have organized my free time in such a way that I switch off from professional duties". The scale and its subdimensions showed excellent reliability before ($\alpha = 0.91$) and during ($\alpha = 0.91$) the crisis. Concerning the off-job crafting subdimensions, the scales showed excellent reliabilities given the low number of items before and during the crisis (see Table 4.1).

Demographic and COVID-19 Specific Variables. We measured key demographic variables, including age, gender, education, and nationality.

Statistical Analysis

Data analyses were conducted using the statistical software R [34]. Although we did not identify any outliers in our sample, we still inspected the extreme values in overall mean scores (i.e., 1 and 5). In total, there were 50 participants with at least one such "extreme" score. A more detailed analysis showed that there were no extreme scores that would be suspicious (i.e., suggesting mindless responding). Moreover, we implemented attention checks in the survey (e.g., "Please choose option 4") to filter out random answers. Therefore, we did not exclude these values as these values were possible, and they occurred only in a small number of cases.

Before conducting the analyses for the research questions, we first tested both concepts (i.e., burnout and off-job crafting) for configural, metric, and scalar invariance across the two-time points using the full information maximum likelihood estimation procedure from the *lavaan* package [35]. To evaluate the models, we used comparative-fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) with the conventional cut-off values. The goodness-of-fit values for CFI surpassing 0.90 indicated an acceptable fit, and exceeding 0.95 indicated a good fit [36]. A value under 0.08 for SRMR and RMSEA indicated a good fit [37]. The models were compared using chi-square difference tests. The configural fit for OJC was good (CFI = 0.983; RMSEA = 0.04, SRMR = 0.03), and we then tested for metric invariance in which the factor loadings were constrained to be equal across the two-time points. The model fit was good, and there were no significant differences between the two models: $\Delta\chi^2 = 9.9$, $\Delta df = 11$, $p = 0.54$. Finally, we tested for scalar invariance, where the intercepts were also fixed to be equal across the two-time points. The fit indices were good, and the model did not significantly differ from the metric model: $\Delta\chi^2 = 18.7$, $\Delta df = 11$, $p = 0.07$. The configural fit for burnout was good (CFI = 0.968; RMSEA = 0.09, SRMR = 0.03), so we proceeded with metric invariance. The metric fit was good, and there were no significant differences between the two models: $\Delta\chi^2 = 3.18$, $\Delta df = 5$, $p = 0.67$. Finally, we tested for scalar invariance. The fit indices were good, and the model did not significantly differ from the metric model: $\Delta\chi^2 = 5.06$, $\Delta df = 5$, $p = 0.41$. We were, therefore, able to establish configural, metric, and scalar invariance for both studied variables, enabling us to conduct appropriate analyses for the three research questions.

To examine the impact of the pandemic on off-job crafting and burnout (Research Question 1), pre-post comparisons were conducted using paired sample t-tests. Correlation analyses were used to assess the cross-sectional associations between off-job crafting and burnout before and during the COVID-19 crisis, respectively (Research Question 2a), and the longitudinal associations between off-job crafting before the

crisis and burnout during the pandemic (Research Question 2b). Multiple hierarchical linear regression analyses were conducted to examine the predictive value of off-job crafting before the crisis on burnout during the crisis, controlling for burnout before the crisis (Research Question 3). By controlling for these variables in the second step, we were able to assess the predictive value of the off-job crafting dimensions before the crisis on a change in burnout levels during the crisis, ruling out possible confounding effects of other variables affecting burnout at baseline. We conducted this regression analysis using both the total off-job crafting concept to test its explanatory power for burnout during the crisis as well as its six subdimensions to test which off-job crafting subdimensions predict the biggest change in burnout. Annotated R script with all the analysis is included as Supplementary Material (See Supplementary Martial File 1).

Ethical Considerations

Informed consent was obtained from all participants. The study included adult participants (18+ years) only. Participants voluntarily completed the questionnaires, guaranteeing their anonymity. For anonymous surveys on working/living conditions and self-reported mental well-being and health, no ethical review was necessary under the national Swiss Human Research Act (Central Ethics Committee of the University of Zurich, https://www.research.uzh.ch/en/procedures/ethikkommissionen.html, accessed on 23 December 2021), or departmental rules (Department of Data Protection at the University of Zurich, www.dsd.uzh.ch/en/, accessed on 23 December 2021). The study was conducted under strict observation of ethical and professional guidelines.

Results

Changes and Associations between Off-Job Crafting and Burnout Before and During the Crisis

Related to Research Question 1, Table 4.1 shows the means and the results of the bivariate correlation analyses between off-job crafting and burnout before the onset of the pandemic. The results of the paired-sample t-tests showed a significant decrease in burnout at T2 (ΔM = –0.10) compared to T1, $t(657) = 3.91$, $p < 0.001$, and in the dimension of off-job crafting for affiliation (ΔM = –0.16), $t(649) = 4.78$, $p < 0.001$; see Figures 4.1 and 4.2. The effect size was small in both cases ($d = 0.19$; $d = 0.15$, respectively). The other off-job crafting dimensions (i.e., crafting for detachment, relaxation, autonomy, mastery, and meaning) did not significantly change between T1 and T2.

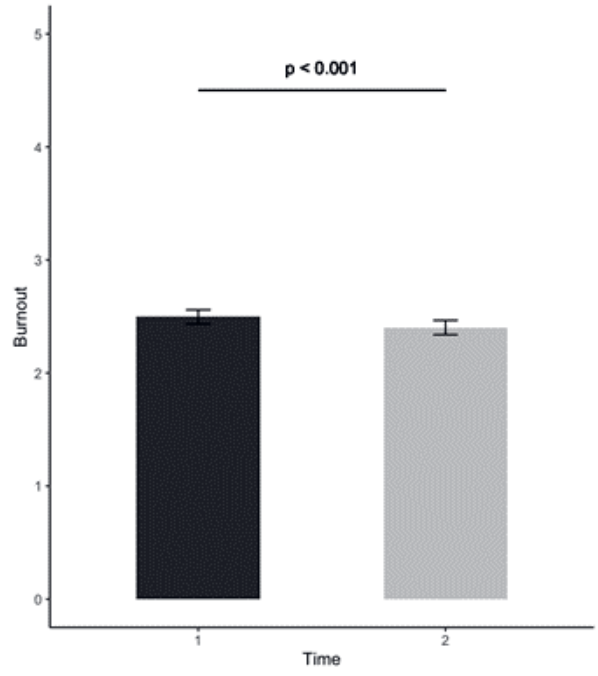

Figure 4.1. Pre-test (before the crisis) and post-test (during the crisis) changes in burnout.

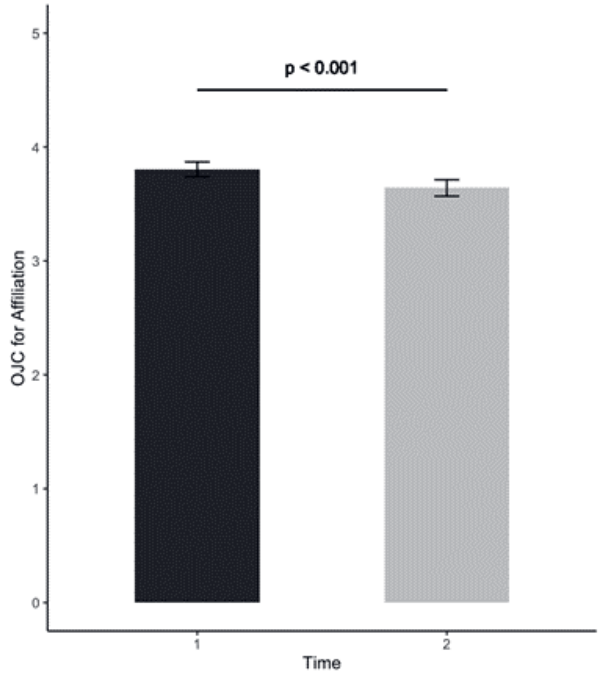

Figure 4.2. Pre-test (before the crisis) and post-test (during the crisis) changes in off-job crafting (OJC) for affiliation.

Concerning Research Question 2, the results showed that all subdimensions and the combined off-job crafting score (i.e., average across all dimensions) were cross-sectionally negatively associated with burnout before and during the COVID-19 crisis. These negative associations between off-job crafting and burnout were also present longitudinally, indicating that employees who off-job crafted for detachment, relaxation, autonomy, mastery, meaning, and affiliation before the crisis experienced fewer burnout complaints during the crisis. Off-job crafting for affiliation showed the strongest negative association with burnout, followed by off-job crafting for detachment, autonomy, mastery, meaning, and relaxation.

Predictive Values of Off-Job Crafting Before the Crisis on Burnout During the Crisis

Table 4.2 shows the results of the multiple hierarchical regression analyses to address Research Question 3. The results of the regression analysis for Model 1 indicated that the model was a significant predictor of burnout during the crisis: $R^2 = 0.51$, $F(2, 655) = 341.4$, $p < 0.001$ explaining 51% of the variance. Burnout during the crisis was significantly predicted by the total concept of off-job crafting before the crisis, meaning that employees who crafted before the crisis experienced less burnout during the crisis.

When looking at the subdimensions of off-job crafting in Model 2, off-job crafting before the crisis was a significant predictor of burnout during the crisis: $R2 = 0.51$, $F(7, 650) = 100.3$, $p < 0.001$, explaining 51% of the variance. Burnout was most strongly predicted by detachment followed by affiliation. Relaxation, autonomy, mastery, and meaning were not significant predictors. This suggests that employees who crafted for detachment and affiliation before the crisis experienced less burnout during the crisis.

The results of the regression analysis for Model 3 showed that off-job crafting before the crisis was a significant predictor of burnout during the crisis: $R2 = 0.52$, $F(3, 650) = 233.4$, $p < 0.001$, explaining 52% of the variance. This indicates that, when controlling for burnout and off-job crafting before the crisis, burnout during the crisis was predicted by off-job crafting during the crisis. Therefore, people who crafted during the crisis experienced fewer changes in burnout during the crisis.

Table 4.1. Means, standard deviations, Cronbach alphas, and bivariate correlations between the study variables.

	M	*SD*	*α*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Burnout T1	2.50	0.80	0.89	1															
2. Burnout T2	2.40	0.83	0.87	0.71	1														
3. OJC T1	3.74	0.61	0.91	−0.27	−0.29	1													
4. OJC T2	3.71	0.65	0.91	−0.29	−0.24	0.59	1												
3. OJC for Detachment T1	3.91	0.88	0.86	−0.19	−0.24	0.69	0.41	1											
4. OJC for Relaxation T1	3.79	0.83	0.83	−0.17	−0.17	0.73	0.43	0.66	1										
5. OJC for Autonomy T1	3.85	0.76	0.75	−0.23	−0.22	0.80	0.48	0.45	0.52	1									
6. OJC for Mastery T1	3.44	0.87	0.82	−0.18	−0.20	0.76	0.46	0.30	0.39	0.63	1								
7. OJC for Meaning T1	3.61	0.79	0.78	−0.21	−0.20	0.77	0.46	0.28	0.33	0.57	0.70	1							
8. OJC for Affiliation T1	3.80	0.86	0.89	−0.25	−0.28	0.71	0.40	0.33	0.33	0.45	0.44	0.62	1						
9. OJC for Detachment T2	3.93	0.89	0.85	0.08 *	−0.18	0.38	0.70	0.50	0.36	0.28	0.16	0.19	0.19	1					
10. OJC for Relaxation T2	3.82	0.82	0.80	−0.09 *	−0.15	0.42	0.73	0.34	0.47	0.37	0.25	0.25	0.21	0.62	1				
11. OJC for Autonomy T2	3.82	0.83	0.80	−0.11 **	−0.17	0.47	0.83	0.32	0.35	0.47	0.38	0.35	0.26	0.50	0.57	1			
12. OJC for Mastery T2	3.45	0.87	0.82	−0.14	−0.21	0.47	0.78	0.22	0.27	0.38	0.53	0.45	0.29	0.36	0.42	0.66	1		
13. OJC for Meaning T2	3.57	0.81	0.76	−0.13 **	−0.19	0.48	0.77	0.20	0.23	0.41	0.48	0.52	0.34	0.32	0.37	0.61	0.66	1	
14. OJC for Affiliation T2	3.64	0.93	0.89	−0.13 *	−0.19	0.44	0.70	0.24	0.24	0.30	0.30	0.37	0.51	0.32	0.33	0.43	0.48	0.58	1

Note. $N = 658$; all correlations are significant at $p < 0.001$, if not indicated otherwise; ** $p < 0.01$ * $p < 0.05$.

Table 4.2. Multiple linear regression analyses between off-job crafting and burnout during crisis (T2).

Model	Predictor	Estimate	SE	95% CI		β	R^2	F(df)	ΔR^2	ΔF
				LL	UL					
	Model 1									
Step 1	Burnout T1	0.73	0.03	0.67	0.78	0.71 ***	0.498	653.5 (1, 656)		
Step 2	Burnout T1	0.69	0.03	0.64	0.75	0.68 ***	0.508			
	OJC T1	0.14	0.04	−0.22	−0.07	−0.11 ***				
								341.4 (2, 655)	0.010	312.1 ***
	Model 2									
Step 1	Burnout T1	0.73	0.03	0.67	0.78	0.71 ***	0.498	653.5 (1, 656)		
Step 2	Burnout T1	0.69	0.03	0.63	0.75	0.67 ***				
	OJC for Detachment T1	−0.12	0.18	−0.19	−0.05	−0.13 ***				
	OJC for Relaxation T1	0.06	0.03	−0.02	0.13	0.06				
	OJC for Autonomy T1	0.01	0.04	−0.07	0.09	0.01				
	OJC for Mastery T1	−0.07	0.04	−0.15	0.01	−0.07				
	OJC for Meaning T1	0.04	0.04	−0.04	0.13	0.04				
	OJC for Affiliation T1	−0.07	0.03	−0.14	−0.01	−0.07 *				
							0.514	100.3 (7, 650)	0.016	553.2 ***
	Model 3									
Step 1	Burnout T1	0.69	0.03	0.64	0.75	0.68 ***	0.508	341.4 (2, 655)		
	OJC T1	−0.14	0.04	−0.22	−0.07	−0.11 ***				
Step 2	Burnout T1	0.69	0.03	0.64	0.75	0.68 ***				
	OJC T1	−0.05	0.05	−0.14	0.04	−0.04				
	OJC T2	−0.16	0.04	−0.24	−0.07	−0.12 ***				
							0.516	233.4 (3, 650)	0.008	108 ***
	Model 4									
Step 1	Burnout T1	0.73	0.03	0.67	0.78	0.71 ***	0.498	653.5 (1, 656)		
Step 2	Burnout T1	0.69	0.03	0.63	0.75	0.67 ***				
	OJC for Detachment T2	−0.09	0.03	−0.16	−0.03	−0.10 **				
	OJC for Relaxation T2	0.01	0.04	−0.07	0.08	0.01				
	OJC for Autonomy T2	0.02	0.04	−0.06	0.10	0.02				
	OJC for Mastery T2	−0.05	0.04	−0.12	0.03	−0.05				
	OJC for Meaning T2	−0.03	0.04	−0.11	0.05	−0.03				
	OJC for Affiliation T2	−0.03	0.03	−0.09	0.03	−0.04				
							0.519	99.2 (7, 630)	0.021	554.3 ***

Note. $N = 658$; *** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$.

Looking at the subdimensions of off-job crafting in Model 4, the model showed that off-job crafting during the crisis was a significant predictor of burnout during the crisis: R2 = 0.52, F(7, 630) = 99.2, $p < 0.001$, explaining 52% of the variance. Burnout was significantly predicted by crafting for detachment, but none of the other subdimensions

reached significance. This suggests that employees who crafted for detachment during the crisis experienced less burnout during the crisis.

Discussion

Theoretical Implications

The overarching aim of this study was to examine the role of off-job crafting in burnout prevention during the COVID-19 crisis. First, we synthesize the results of our longitudinal study, followed by practical implications, reflections on study limitations and strengths, and directions for future studies in this research area.

The results regarding Research Question 1 showed that both burnout and off-job crafting for affiliation decreased during the crisis compared to before the crisis. After the onset of the pandemic, employees experienced less physical and psychological fatigue and exhaustion related to their job. This is in line with Kimhi et al. [38], who showed that negative outcomes such as distress symptoms decreased while positive outcomes, such as perceived well-being, increased during the crisis. Since burnout is a work-related phenomenon [20], the decrease in burnout levels may be attributed to the slowing down of the whole economy due to the crisis, which potentially reduced experienced job demands such as workload and increased job resources such as autonomy. Speculatively, the crisis may have 'forced' employees to also slow down their everyday pace of life, thereby supporting their recovery from work in their non-working context. Related to this, the decrease in off-job crafting for affiliation may be attributed to the lockdown, in particular the social distancing measures, which significantly reduced the opportunities for socializing with others.

The results concerning Research Questions 2a and 2b indicate that, even though burnout and off-job crafting decreased during the crisis, employees who crafted in relation to detachment and affiliation experienced less burnout before and during the crisis. Although previous studies have not yet focused on a differentiated perspective for the six off-job crafting dimensions for burnout prevention, the finding aligns with previous studies investigating the benefit of satisfaction of the six DRAMMA dimensions in relation to work-related stress [13,20]. The results also align with studies focusing on other coping resources, such as having a positive attitude, which has shown to mediate the relationship between perceived stress and life satisfaction during the pandemic [39]. The present study complements this research by showing that the overall off-job crafting concept and its subdimensions are all negatively associated with burnout both cross-sectionally and longitudinally in crisis situations. Moreover, the results related to Research Questions 3a and 3b showed that people who off-job crafted for specific crafting dimensions before and during the crisis reported less burnout during the crisis. In this regard, looking at the off-job crafting dimensions, employees who crafted for

detachment before and during the crisis and for affiliation before the crisis reported fewer burnout complaints during the crisis. Our results indicate that detachment seems to be the most relevant dimension of off-job crafting in relation to burnout. This is in line with previous research that indicates the protective value of detachment against burnout [13]. Employees that crafted their off-job time according to this specific need might consequently be better able to detach from work during the crisis. Affiliation is also known to be a protective resource against burnout in the workplace [40], which indicates that even in times of a rigorous lockdown employees could still benefit from the experience of affiliating in terms of lower risk of burnout complaints. The other off-job crafting dimensions (i.e., relaxation, autonomy, mastery, and meaning) did not significantly predict burnout in any of the regression models, suggesting that these dimensions do not play a big role in burnout prevention during the crisis.

Practical Implications

The present findings yield valuable insights for practice (e.g., interventions) to stimulate off-job crafting behaviors, which may, in turn, prevent the onset or alleviate burnout complaints. The results showed that crafting in relation to detachment and affiliation seems particularly important in burnout prevention in crisis situations. Both of these crafting dimensions can possibly be targeted through interventions on recovery in general [41] and by a recently designed hybrid off-job crafting intervention [42]. With regard to recovery interventions in general, Hahn et al. [41] developed and evaluated a recovery training program comprising multiple training sessions targeting employees' control during off-job time, psychological detachment from work, transition rituals, mastery experiences, and relaxation and sleep. The effect evaluation of this intervention showed that the intervention decreased perceived stress, among other outcomes [41].

Concerning the above-proposed hybrid off-job crafting intervention, Kosenkranius et al. [42] developed two on-site group training sessions in which employees learn about off-job crafting and how to achieve the satisfaction of needs. Additionally, a smartphone app (i.e., Everydaily) has been developed to support employee engagement in off-job crafting. Participants receive daily suggestions for three different activities to help them satisfy their psychological needs, such as engaging in nature walks, mindfulness, volunteer work, or scheduling an hour of "me-time" on the agenda. Although the intervention has not been evaluated yet regarding its effectiveness, it may inspire companies and provide them with ideas to stimulate off-job crafting behaviors. Implementing such interventions might also be relevant for public health policies during this COVID-19 pandemic.

Limitations and Strengths

This study has several limitations and strengths that should be taken into account when interpreting the results, which we translated into possible directions for future studies. It

is a particular strength of this study that it refers to a broad and relatively large sample, offering a pre-post study design concerning the COVID-19 crisis. A first limitation is that all measures were self-reported, which may bring multiple common methodological biases, such as socially desirable answers, aggravated by the length of the survey [43]. However, we used valid and reliable scales to enhance the internal validity of the study, as reflected in the good reliability of all scales. It is a strength of this study that it applied a longitudinal study design, using one wave before the crisis and one wave during the pandemic. This allowed us to comprehensively test for changes in burnout and off-job crafting during the crisis compared to before the crisis and to examine the extent to which off-job crafting before and during the crisis changed burnout levels during the crisis, covering one year and similar periods of the year (March 2019–April 2020). Future research may identify how off-job crafting across even shorter time intervals (e.g., daily or weekly) exerts its influence on the prevention of burnout [44] and how daily crafting can be promoted through interventions [42].

Second, it is of interest to examine the role of off-job crafting in relation to restoring employees' ability to regulate cognitive and emotional processes, as an impediment to these processes has recently been acknowledged as additional burnout symptoms [45]. Being physically and mentally exhausted still remain important core symptoms of burnout (i.e., "I can no longer do my job"). However, these symptoms are intertwined with a reduced capacity to regulate cognitive and emotional functioning (i.e., "I do not want to do my job anymore") and are often accompanied by a depressed mood and non-specific psychological and psychosomatic tension complaints [45,46]. The present study could not consider these recent developments in research, as we started collecting data long before the publication of these recent measures and manuals for burnout research. Future studies are hence encouraged to understand how employees' crafting styles in their non-working life can potentially also reduce burnout through enhancing or restoring cognitive and emotional functioning.

Third, although the findings of the present study show that off-job crafting contributes to fewer burnout complaints during the crisis, the explained variance and standardized beta coefficients were relatively small. This implies that other factors may play a role in burnout prevention in crisis situations, for instance, the role of job security, family relationships, proactive personality, and actually contracting the corona disease. Future studies are recommended to include such factors. Moreover, 85% of the participants in our study were German, which means that the results should be generalized with caution to the underrepresented Swiss population or other countries.

Finally, it could be that employees with low levels of burnout complaints are able to craft more proactively than those with high levels of burnout complaints (i.e., reverse causation). However, we controlled the regression analyses for burnout before the crisis, and the results do suggest that employees who proactively crafted before the crisis experienced less burnout during the crisis—independent of their baseline level of

burnout. Nevertheless, future studies are encouraged to test possible reverse causations between off-job crafting and burnout within and beyond crisis situations. We also tested whether burnout at T1 could predict changes in off-job crafting between T1 and T2 and did not find statistically significant relationships. This suggests that the relationship between off-job crafting and burnout is in the expected (causal) direction.

Conclusions

The present study shows that both burnout and off-job crafting for affiliation decreased during the COVID-19 crisis compared to before the crisis, while other off-job crafting dimensions remained stable across time. The findings also show that employees who crafted in their off-job time before the crisis experienced fewer burnout complaints during the crisis. Looking more closely at the subdimensions of off-job crafting, employees who crafted for detachment and affiliation before the crisis, and those crafting for detachment during the crisis, reported less burnout during the crisis. Overall, the present study offers unique insights into how employees can proactively craft during crisis situations and complements the existing body of knowledge on burnout prevention. We hope these findings will encourage future researchers to examine the role of off-job crafting in burnout prevention beyond crisis situations and help to develop interventions to increase employees' off-job crafting capacities.

Supplementary Materials: The following supporting information can be downloaded at: www.mdpi.com/xxx/s1.

Author Contributions: conceptualization, all authors; methodology, all authors; validation, all authors; formal analysis, M.T.; R.P.; writing—original draft preparation, R.P., P.K., M.T.; writing—review and editing, all authors; visualization, M.T.; R.P. All authors have read and agreed to the published version of the manuscript.

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5

Chapter 5

Combined interventions to reduce burnout complaints and promote return to work: A systematic review of effectiveness and mediators of change

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Abstract

Burnout has adverse effects on the health and work-related outcomes of employees. Nevertheless, little is known about effective ways of reducing burnout complaints and facilitating a full return to work, which defines rehabilitation. This study consists of a systematic review of the effects of combined interventions (i.e., both person-directed and organization-directed). It also includes the identification and description of mediators of change, thereby explaining how combined interventions do or do not work. Seven electronic databases were searched for English peer-reviewed publications: the Psychology and Behavioral Sciences Collection; PsycARTICLES; Web of Science; Scopus; SocINDEX; PubMed; and PsycINFO, using various combinations of search terms (e.g., burnout AND intervention). Out of 4110 abstracts published before 29 September 2019, 10 studies (reporting the effects of nine combined interventions) fulfilled the inclusion criteria, which were defined using PICOS criteria (participants, interventions, comparators, outcomes, and study design). Although the risk of bias in the included studies is high, all combined interventions were effective in facilitating rehabilitation. Results suggest that involving employees in decision-making and enhancing their job control and social support, while eliminating stressors, explains the effectiveness of the interventions. With caution, workplace health promotion practitioners are encouraged to use these findings to tackle burnout among employees.

Introduction

In the countries of the Organization for Economic Co-operation and Development (OECD), work-related stress is the leading cause of absenteeism [**1**], with significant financial consequences for society [**2**]. The best-known occupational syndrome—burnout—has adverse effects on the health and well-being of employees (e.g., increasing physical illness [**3**]), in addition to affecting their attitudes at work (e.g., decreasing organizational involvement [**4**,**5**]). For instance, burnout has shown to be an important correlate of musculoskeletal disorders (e.g., chronic back pain), which, in turn, are associated with a further increase in burnout complaints, daily productivity loss and form a major cause of occupational leave and prolonged recovery time [**6**,**7**]. Moreover, burnout and its adverse effects on the health and well-being of the workforce are associated with high rates of sick leave and replacement costs [**8**,**9**]. It is therefore of the utmost importance to tackle burnout, both for employee health and well-being and for organizational development and performance.

Burnout is predominantly described as an outcome of "a prolonged response to chronic emotional and interpersonal stressors on the job, defined by the three dimensions of exhaustion, cynicism, and professional efficacy" [**10**] (p. 397). Emotional exhaustion refers to a feeling of being depleted and overextended by one's emotional and physical resources. Cynicism and depersonalization refer to a detached response to various aspects of the job. Reduced efficacy and accomplishment refer to a sense of incompetence and lack of productivity at work [**11**]. Burnout complaints can occur in employees who are currently still working. Over time, however, burnout can lead employees to take sick leave and become unable to work [**12**]. According to several theories, burnout develops in a non-linear manner [**13**]. Models that are well-supported by empirical evidence include the Job Demand-Control Model [**14**], Conservation of Resources theory [**15**], and the Job Demands-Resources Model [**16**]. These models emphasize that the development of burnout is fostered through a complex interplay between factors within employees (e.g., low self-esteem) and factors within the organizational context (e.g., work overload). Based on these theories, interventions should target both employees and their working contexts in order to facilitate rehabilitation (i.e., reducing burnout complaints and promoting a full return to work (RTW) [**17**]. Examples of person-directed interventions include psychotherapy and mindfulness sessions. Examples of organization-directed interventions include changing working schedules and team building.

Scientific Gap

To date, most systematic reviews and meta-analyses have focused separately on either person-directed or organization-directed interventions, both of which have proven suboptimal in facilitating rehabilitation [**18**]. Their lack of effectiveness has consequently been attributed to the single-level approach (either person-directed or organization-

directed interventions) [**18**]. There is thus a need to synthesize the effectiveness of existing combined interventions (both person-directed and organization-directed). Although existing theories suggest that combined interventions could be effective in facilitating rehabilitation, it would also be interesting to examine why and how interventions do or do not work. This has yet to be sufficiently understood [**18**,**19**,**20**]. In studies on interventions aimed at reducing stress-related complaints in general (and not specifically burnout), job control has been found to mediate changes in such complaints [**21**]. It would therefore be worthwhile to explore the role of possible mediators of change in combined interventions.

Study Objective

Based on studies with experimental designs, the present study aims to assess the effectiveness of combined (both person- and organization-directed) interventions for employees with burnout complaints (currently either working or not working) on facilitating rehabilitation. Complementary, this review aims to identify and describe mediators of change that could explain how combined interventions do or do not work.

Methods

The systematic review was structured according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [**22**]. More specifically, we used the PRISMA checklist to guide the design and reporting of the systematic review (**supplementary materials, Table S1**). Since we did not aim to conduct a meta-analysis of the combined interventions, not all elements of this checklist were relevant for this review (e.g., statistical measures of consistency).

Inclusion Criteria

Five inclusion criteria were applied to the identified studies based on the PICOS criteria (participants, interventions, comparators, outcomes, and study design). First, to reduce heterogeneity between studies, those focusing on employees were included, while those focusing on students [**23**], athletes [**24**], and volunteers [**25**] were excluded. Second, combined interventions (both person-directed and organization-directed) were included. Third, we did not define a comparison exposure, which means that experimental studies that did not include a control group were included. Fourth, studies using the Maslach Burnout Inventory (MBI) to assess burnout were included, as the MBI is regarded as the gold standard for measuring burnout [**26**], thereby enhancing comparability between studies. With respect to return to work (RTW), all operationalizations were included. Fifth, randomized controlled trials, quasi-experimental, and pre-test/post-test study designs were included, as these designs provide more robust evidence than

cross-sectional or other non-experimental designs [**27**]. Finally, only studies published in English between 1970 and 29 September 2019 were included.

Data Sources and Search Terms

Seven electronic databases were searched for peer-reviewed publications: the Psychology and Behavioral Sciences Collection; PsycARTICLES; Web of Science (all databases); Scopus; SocINDEX; PubMed; and PsycINFO. Search terms were based on the three dimensions of burnout—emotional exhaustion, depersonalization *or* cynicism, personal accomplishment *or* professional efficacy, Maslach Burnout Inventory *or* MBI—and combined with *and* "intervention". To ensure substantial breadth and depth in the electronic databases, the search strategy was pilot tested before the search was conducted. The first author conducted the electronic search.

Search Strategy

The database search yielded 4110 hits, including a large number of duplicates (n = 1154). The subsequent search strategy consisted of two stages (See Figure 5.1). In the first stage, titles and abstracts were screened against the inclusion criteria, and abstracts deviating from them were excluded (n = 2638). Where the reviewer was uncertain, the abstract was moved to the next stage for a full-text review. In the second stage, full-text articles were screened (n = 318) against the inclusion criteria. Studies that did not meet the inclusion criteria (e.g., non-combined interventions) were excluded (n = 308). The first three authors were involved in the full-text screening stage, and in case of uncertainty, the fourth authors acted as tie-breakers for the inclusion or exclusion of the remaining articles. The reference lists of the included articles were screened to identify any additional relevant studies. These lists did not reveal any additional studies, and 10 studies were ultimately included in the review.

Data Extraction and Quality Assessment

The data extraction phase consisted of two steps. In the first step, studies were described according to the following characteristics: author(s) and country; setting and design; study aim and outcomes; participants; controls; theoretical framework; interventions; mediators of change; duration and frequency; pre-test, post-test, and follow-up; and results. In the second step, statistically significant effects of the combined interventions on the reduction of burnout complaints and the promotion of RTW were described, as were the theoretical assumptions and mediators of change. All researchers were actively involved in defining how the data should be extracted and described in an iterative process.

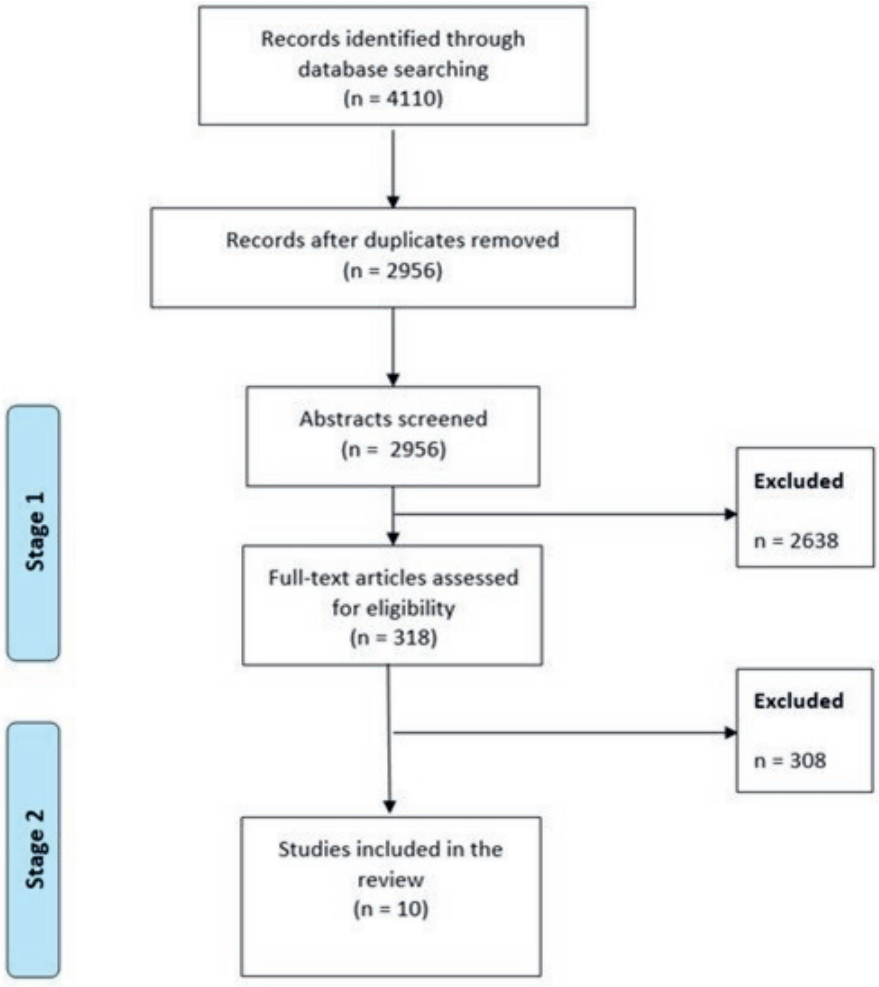

Figure 5.1. Process of study selection.

The theoretical assumptions underlying the combined interventions were described in order to enhance insight into why the interventions did or did not work. For combined interventions that were not built on any specific theory, it was deemed appropriate to describe the general assumptions made by the authors (if described). With regard to mediators of change, in addition to reporting those mediators that were explicitly measured and evaluated concerning change in the outcome variables, we also described mediators of change that were identified in the theoretical (or other) assumptions underlying the combined interventions

Since the overarching aim of this review is to assess the effectiveness of the combined interventions for the rehabilitation of employees with burnout, it is important to assess the risk of bias of the included studies to determine the extent to which the reported effects can be attributed to the interventions and not to a lack of methodological rigor.

To assess this risk of bias, we used the Quality Assessment Tool for Quantitative Studies, which was specifically developed by the Effective Public Health Practice Project for this critical step [**28**]. The tool can be applied in any public health topic area and has been evaluated on its validity and reliability, which proved to be strong [**28**,**29**]. The tool defines six components to assess the risk of bias: selection bias (e.g., do the study participant represent the target population?), study design (e.g., was a randomized controlled trial design used?), confounders (e.g., how did the authors deal with possible differences between experimental and control groups?), blinding (e.g., were the study participants aware of the research question?), data collection methods (e.g., were the measurements instruments reliable and valid?), withdrawals and dropouts (e.g., were withdrawals and dropouts reported?) [**28**]. The first author conducted the assessment, and nine studies showed a "high" risk of bias, and one study was assessed as having a "moderate" risk of bias. Studies were not excluded based on this assessment; however, the results should be interpreted with caution. To ensure transparency, the assessment scores can be found in the **Supplementary materials, Table S2**.

Results

Description of the Studies

Descriptive information regarding the 10 studies in this review is presented in Table 5.1.

Countries, Settings, and Research Designs

The articles were based on studies conducted in eight countries: USA (n = 2), Sweden (n = 2), the Netherlands (n = 2), Norway (n = 1), Finland (n = 1), Hong Kong (n = 1) and England (n = 1). The settings were highly heterogeneous, ranging from self-employed individuals to white-collar workers and healthcare workers. The research designs also varied, ranging from a controlled clinical trial to pre-test/post-test designs. This was also the case for the time between pre-tests and follow-up measurements, which ranged from four months (Study 5) to 30 months (Studies 1 and 2).

Table 5.1. Included articles (N = 10).

Author/s, Country	Setting, Design	Study Aim, Outcome/s	Participants	Controls	Theoretical Framework	Interventions	Mediators of Change Measured	Duration	Pre-Test (T1), Post-Test (T2), Follow-Up (T3)	Results	Risk of Bias
White-collar workers											
Studies 1,2 [30,31]; Sweden	Employees on sick leave due to burnout; identified from a social insurance register; controlled clinical trial design	Promoting RTW; RTW (sick leave percentage)	Workers with burnout; confirmed by medical examination and questionnaire interview (n = 74)	Workers with burnout who were not interested in participating in the intervention; no intervention (n = 74)	Job-person (mis)match	Combined intervention: a convergence dialogue meeting (i.e., dialogue between the patient and the supervisor to find solutions to facilitate RTW)	Partial work resumption expected to foster full RTW	Half-day seminar, 1.5-hour meeting	After 18 and 30 months, the total sick leave↓ in the combined intervention group, as compared to the control group	After 18 and 30 months, the total sick leave↓ in the combined intervention group, as compared to the control group	High
Study 3 [32]; Netherlands	Staff members of 29 oncology wards of 18 general hospitals; quasi-experimental design	Reducing burnout complaints; MBI-HSS (EE, DP)	Staff members at risk of developing burnout; randomly selected from 9 wards (n = 260)	Staff members; remaining 19 wards; no intervention (n = 404)	Not reported	Combined intervention: a staff support group and a participatory approach (n = 260)	Job control, social support, participation in decision-making, quantitative demands and patient-related emotional demands	6 monthly sessions of 4 hours each	T1–before the intervention T2–6 months later, directly after the intervention ended T3–6 months after the intervention ended	In the combined intervention, EE↓ at both T2 and T3, DP↓ at T3 compared to the control group	High
Study 4 [33]; Hong Kong	Construction-related professionals engaged in property development, consulting and contracting companies; quasi-experimental design	Reducing burnout complaints; MBI-GS (EE, CY, PE)	Workers at risk of developing burnout; all workers worked in the same company (n = 55)	None	Job-person (mis)match	Combined intervention; based on job-redesign addressing stressors and resources in the workplace (n = 55)	None	A period of one year. The frequency of the interventions differed according to the activity	T1–before the intervention T2–1 year after the intervention T3–none	EE↓, CY↓ after the combined intervention; PE↔	High

Author/s, Country	Setting, Design	Study Aim, Outcome/s	Participants	Controls	Theoretical Framework	Interventions	Mediators of Change Measured	Duration	Pre-Test (T1), Post-Test (T2), Follow-Up (T3)	Results	Risk of Bias
Study 5 [34]; Finland	White-collar women diagnosed as having various job-related psychological health problems (e.g., burnout); quasi-experimental design	Reducing burnout complaints; MBI-GS (EX, CY, PE scores)	Female white-collar workers; diagnosed by physicians based on their medical report application (n = 20 + 32)	Female white-collar workers; awaiting treatment (n = 12).	Based on job-person (mis)match	Traditional intervention: primary focus on the individual but when necessary, also on the individual-organizational interface (n = 32) Combined intervention: similar to the traditional intervention but based on a participatory approach (n = 21)	Job control, social support, participation in decision-making	One year with two rehabilitation periods (12 and 5 days, respectively)	T1–before the intervention T2–after the first part of the intervention, 4 months after T1 T3–after the second part of the intervention, 8 months after T2	In the combined intervention, EX↓ between T1 and T2 and between T1 and T3; CY↓ between T1 and T2; PE↔ In the traditional intervention, EX↔, CY↔, DP↔ In the control group, CY↓ between T1 and T2; CY↔, DP↔	High
Study 6 [35]; Norway	Staff members working with people with intellectual disabilities in two municipalities; 2 groups, pre-test/post-test design	Reducing burnout complaints; MBI-GS (EX, CY, PE scores)	Staff working in one municipality at risk of developing burnout (n = 79)	Staff working in a different municipality; no intervention (n = 33)	Job-person mismatch	Combined intervention: focusing on the individual (e.g., exercise in a health club) and the organization (e.g., improving the working schedule) (n = 79)	None	A period of 10 months. The frequency of the interventions differed depending on the activity	T1–before the intervention T2–after the intervention, (i.e., after 10 months) T3–none	In the combined intervention EX↓ after the intervention, as compared to the control group; CY↔, PE↔ In the control group, EX↔, CY↔, PE↔	High

Author/s, Country	Setting, Design	Study Aim, Outcome/s	Participants	Controls	Theoretical Framework	Interventions	Mediators of Change Measured	Duration	Pre-Test (T1), Post-Test (T2), Follow-Up (T3)	Results	Risk of Bias
Healthcare workers											
Study 7 [36]; USA	General surgery residents working at the University of Arizona; one group, pre-test/ post-test design	Reducing burnout complaints; MBI-GS (EX, CY, PE)	Staff members at risk of developing burnout; the intervention was part of their formal (on the job) education (n = 49)	None	Not reported	Combined intervention: multiple activities (e.g., mindfulness sessions, team building) (n = 49)	None	A period of one year. Monthly, interactive sessions were provided	T1–before the intervention T2–One year after the implementation of the intervention T3–none	EE↓ after the combined intervention; CY↔, PE↔	High
Study 8 [37]; England	Staff working in an in-patient alcohol ward; one group, pre-test/ post-test design	Reducing burnout complaints; MBI (EE, DP, PA)	Staff members at risk of developing burnout; all staff were invited to participate in the intervention (n = 19)	None	Demand-Control Support Job Stress Model	Combined intervention: managing stress at the individual, team and organizational level and on understanding the causes and consequences of aggression (n = 19)	None	Two-day training with two weeks between the training days	T1–3 months before the intervention T2–1 month after the intervention ended T3–none	PA↑after the combined intervention, EE↔, DP↔	High
Study 9 [38]; USA	Staff representing 15 departments (e.g., nursing, pharmacy, housekeeping); one group, retrospective pre-test/post-test design	Reducing burnout complaints; MBI-HSS (EE, CY, PA)	Staff members at risk of developing burnout; a stratified random sample reflecting all departments (n = 51)	None	Not reported	Combined intervention: based on experiential techniques (e.g., team building and enhancing self-esteem) (n = 51)	None	Three sessions of three hours each	T1–3 months before the intervention T2–1 month after the intervention ended T3–none	EE↓, PA↑ after the combined intervention; CY↔	High

Author/s, Country	Setting, Design	Study Aim, Outcome/s	Participants	Controls	Theoretical Framework	Interventions	Mediators of Change Measured	Duration	Pre-Test (T1), Post-Test (T2), Follow-Up (T3)	Results	Risk of Bias
Self-employed											
Study 10 [39]; Netherlands	Self-employed individuals on sick leave due to work-related psychological complaints (e.g., burnout); controlled clinical trial design	Reducing burnout complaints, promoting RTW; MBI-NL (EX, DP, PE scores), RTW (mean number of days to partial and full return to work)	Self-employed; screened by psychologists (n = 40 + 40)	Self-employed; asked to postpone their treatment for four months (n = 42)	Not reported	Person-directed intervention: CBT; focused on cognitive restructuring (n = 40) Combined intervention: CBT-based stress management and meetings with labor experts aimed at changing the work context (n = 40)	None	11 bi-weekly sessions of approximately 45 minutes per session 5 to 6 sessions of approximately 1 hour, twice per week	T1-before the intervention T2-4 months after the onset of the intervention T3-10 months after the onset of the intervention	EE↓, DP↓; PE↔, regardless of the intervention Shorter time to partial and full RTW for participants in the combined intervention, as compared to those in the person-directed intervention and control group	Moderate

↑ = significant increase; ↔ = no significant change; ↓ = significant decrease

Abbreviations: CCT = Controlled Clinical Trial; MBI = Maslach Burnout Inventory; MBI–GS = Maslach Burnout Inventory–General Survey; MBI–HSS = Maslach Burnout Inventory–Human Services Survey; MBI–NL = Maslach Burnout Inventory–Netherlands; RTW = Return to Work; EX = Exhaustion; CY = Cynicism; DP = Depersonalization; PA = Personal Accomplishment; PE = Professional Efficacy.

Measures of Burnout and RTW

Most of the studies concerned interventions aimed at reducing burnout complaints (Studies 3, 4, 5, 6, 7, 8, and 9), although three aimed to promote full RTW (Studies1, 2, and 10). Multiple versions of the MBI were used across the studies, including the MBI—General Survey (measuring exhaustion, cynicism, and professional efficacy) and the MBI—Human Survey Index (measuring exhaustion, cynicism, and personal accomplishment). Studies 1, 2, and 10 measured RTW, which was operationalized as the mean number of days to partial and full RTW (Study 10) and the sick leave percentage (Studies 1 and 2).

Combined Interventions, Theories, and Mediators of Change

The combined interventions were all different in terms of content. More specifically, none of the studies evaluated the same person-directed and organization-directed interventions. The duration and frequency of the interventions also differed sharply across the studies, depending on the activities on which the interventions were based. For example, Study 9 was based on three sessions of three hours each, while Study 3 was based on six monthly sessions of four hours each. Multiple theoretical frameworks were identified, with most focused on job-person mismatch (Studies 1, 2, 4, 5, and 6). Study 8 used the Demand-Control-Support Model, and Studies 3, 7, 9, and 10 did not report any theoretical framework.

Effectiveness of the Combined Interventions

Studies 1 and 2

- Effectiveness

A controlled clinical trial design was conducted among Swedish employees on sick leave due to burnout. The authors conclude that, after 18 months, 89% of the employees in the experimental group had RTW to a certain extent, whereas only 73% of employees in the control group had RTW. The effect of the combined intervention remained stable after 30 months, where 82.4% of the employees were back at work, which was still a higher percentage compared to the control group (77.9%).

- Underlying Principles

The combined intervention was based on a convergence-dialogue meeting (CDM), which was intended to cultivate a dialogue between the employee and the supervisor to identify opportunities in order to facilitate RTW.

- The combined Intervention

To facilitate RTW, an outline of the employee's perspective was compiled according to multiple sources (e.g., questionnaire replies, the course of events leading to burnout, and the employee's own views of changes required for RTW). Based on this outline, the supervisor was interviewed at the workplace, in addition to outlining the perceived causes of the employee's absenteeism and the changes required in order to facilitate RTW.

In general, the intervention focused on solutions and changes aimed at the identification of converging perspectives and goals between employees and supervisors.

The CDM started by highlighting the agreements and disagreements between the supervisor and the employee with regard to the causes of the sick leave and the improvements required in order to facilitate RTW. Each session lasted for about 1.5 hours, resulting in agreements concerning short-term and long-term goals and solutions. Thereafter, the employees were invited to a seminar, along with 4–6 other employees who had participated in the intervention. The seminar consisted of discussions and lectures on the topic of work-related (and other) stress. These discussions and lectures were also arranged separately for the supervisors involved. For the employees, the seminar aimed to help them reflect on how they could prevent a similar occurrence of sick leave in the future. For the supervisors, the focus was on how to prevent sick leave related to work stress among their employees.

- Mediators of Change

The expectation that facilitating partial RTW would predict full RTW was not supported by empirical evidence. The principles underlying the combined intervention (e.g., an actual change in the work environment) were not evaluated.

Study 3

- Effectiveness

A quasi-experimental study design was employed to investigate Dutch oncology staff with a risk of developing burnout. The authors conclude that, compared to the two control wards, the combined intervention resulted in significantly less exhaustion after both 6 and 12 months and in less depersonalization after six months.

- Underlying Principles

No specific theoretical framework was reported. Instead, the combined intervention was inspired by a participatory approach, in which the interventions were context-specific and based on an accurate assessment of both individual and organizational factors, rather than relying on pre-packaged, context-independent programs based on a uniform and theory-based approach. The combined intervention was developed in collaboration with external counselors, and it combined a support group with the participatory approach. Before the intervention, intake interviews were held with the managers of the ward (e.g., discussing possible intervention effects) in order to enhance their motivation to implement the interventions.

- The Combined Intervention

The combined intervention consisted of six monthly meetings of three hours each, which were supervised by both of the team counselors. The first session started with education on job stress (although no details were provided) and the results concerning the employees' work situations (e.g., workload, emotional demands, job control, social support, participation in decision-making), as measured at T1, were fed back to the

employees. During this first meeting, the participants selected a number of stressors to be addressed (e.g., lack of social support). Each of the remaining meetings consisted of two parts: education and action. The educational part focused on the emergence and persistence of unwanted behavior (Meeting 2); feedback and communication (Meeting 3); creating a social support network (Meeting 4); and balancing job-related investments and outcomes (Meeting 5). The action part focused on enhancing the abilities of the workforce to cope with stressors effectively. Outcomes of these sessions included restructuring the weekly work meetings in order to allow more staff participation in decision-making.

- Mediators of Change

The authors conclude that the combined intervention significantly increased participation in decision-making, which subsequently led to a decrease in exhaustion. Similar results were reported for social support and job control: increases in both social support and job control were significantly related to simultaneous reductions in exhaustion and depersonalization. Even though participants in the combined intervention reported fewer burnout complaints than did those in the control group, both exhaustion and depersonalization had increased after one year. This result can be explained by an increase in the perceived workload (although it is not clear what contributed to this increase).

Study 4

- Effectiveness

A quasi-experimental study design was employed to investigate construction-related professionals engaged in property development, consulting, and contracting companies in Hong Kong. One year after the combined intervention, employees reported significantly fewer feelings of exhaustion and cynicism than they had before the intervention.

- Underlying Principles

The combined intervention was conducted from the perspective of job-person mismatch, using job-redesign to reduce mismatches (i.e., stressors) identified through a cross-sectional study measuring job-related variables among employees (i.e., working hours, quantitative workload, role conflict, control over work pace, satisfaction with supervisor).

- The combined Intervention

The person-directed interventions included in-house training courses to enhance the ability of employees to cope actively with stressors (e.g., improving time management skills). The organization-directed intervention included a change in working hours (one additional day off every two weeks), which was expected to reduce the incidence of long working hours. The authors did not describe how the combined intervention was implemented or by whom.

- Mediators of Change

The mediators of change (possible stressors) were measured only in order to inform the development of the combined intervention. They were neither tested nor evaluated with regard to the change in burnout complaints reported by employees.

Study 5

- Effectiveness

A quasi-experimental study design was employed in Finland to investigate white-collar workers (e.g., staff from social services and health departments) who were currently on sick leave due to burnout. The authors conclude that the combined intervention produced a significant reduction in feelings of exhaustion after both four and eight months and in cynicism after four months. Although no changes occurred in the person-directed intervention (Control group 1), cynicism decreased significantly in the no-treatment group (Control group 2).

- Underlying Principles

The theoretical framework was based on job-person mismatch. During the intervention process, participants collaborated with representatives from their workplaces and with the rehabilitation staff to reduce mismatches and improve their working environment.

- The combined Intervention

The combined intervention entailed one year, with two rehabilitation periods (12 and 5 days, respectively). Person-directed interventions involved activities including physiological and occupational therapy, which was intended to enhance the abilities of employees to cope with stress and to promote awareness of stress-evoking situations and how people react to stress. The organization-directed intervention included a link to the workplaces of the rehabilitation clients. More specifically, the employee's supervisor, a member of the occupational health and safety organization, and a representative from occupational health care were invited to the rehabilitation center for one day during each rehabilitation period. The inclusion of representatives from the workplace in the rehabilitation process was intended to involve the employer and to create an obligation for the employer to implement the actions agreed upon in order to remedy defects in the workplace.

In the first rehabilitation period, the workplace-related representatives collaborated with the participants and the rehabilitation team to identify ways to improve job conditions for the participants, based on a memorandum that the participants had prepared in advance of this meeting. The memorandum included issues that the participants considered essential to enhancing personal job-related well-being and health. In the second rehabilitation period, the same individuals met at the rehabilitation center again and discussed whether the agreed-upon remedies had been implemented and whether any problems had been related to them. This was expected to reduce

burnout complaints. The purpose of these two meetings was to increase the control that employees had over issues relating to their jobs and to improve their job conditions.

- Mediators of Change

The intervention assumed that a change in burnout complaints (feelings of exhaustion) would be mediated by a decrease in time pressure at work. The changes in two other burnout symptoms (cynicism and reduced professional efficacy) were expected to be mediated, particularly by an increase in perceived job control. Theoretically, the change in these symptoms was also expected to be mediated by improvements in the workplace climate and satisfaction with the supervisor. The results support that the combined intervention significantly increased employee job control and that this increase resulted in lower levels of exhaustion and cynicism over the 12-month rehabilitation process. Workplace climate had only a minimal (non-significant) mediating influence on exhaustion and no effect on cynicism.

Study 6

- Effectiveness

A two-group pre-test/post-test design was employed to investigate community healthcare staff caring for people with disabilities in two municipalities in Norway. In that country, responsibility for people with disabilities was transferred from the county to the municipal level in 1991. The authors conclude that the combined intervention significantly reduced feelings of exhaustion after 10 months, whereas no changes in burnout complaints were observed in the control group.

- Underlying Principles

The combined intervention was conducted from the perspective of job-person mismatch. Rather than trying to eliminate all stressors (i.e., "mismatches"), the intervention assumed that focusing on mismatches that, if resolved, could potentially generate and allow the implementation of concrete solutions that would be most effective in reducing burnout complaints. It was also argued that the involvement of multiple stakeholders (i.e., the manager, two senior leaders, two employees, researchers, and the human resource manager—the working group) and the support of the supervisor were critical success factors for any intervention in the workplace.

- The Combined Intervention

Employees discussed stressors and potential solutions, and this resulted in priority lists concerning actions aimed at improving working conditions. Based on this list, the working group agreed upon a set of intervention strategies to be implemented at both the individual and organizational levels. For example, the person-directed interventions entailed a voluntary exercise program, in which the study participants were expected to exercise to improve fitness. Three organization-directed interventions were implemented: the introduction of performance appraisals, the re-organization of working schedules to promote larger positions (i.e., more working hours each week) and stability among

the staff, and the improvement of routines for new employees (e.g., better on the job training). Specific goals were formulated for each of the interventions. For example, the purpose of the exercise program was to improve the health and well-being of employees, thereby buffering the adverse effects of burnout. The organization-directed interventions were intended to provide feedback to both employees and supervisors, in addition to promoting job security, which is assumed to reduce burnout complaints.

- Mediators of Change

Neither the underlying principles (e.g., enabling employees to participate in decision-making) nor the goals of the intervention (e.g., promoting job security) were evaluated with regard to the change in burnout complaints.

Study 7

- Effectiveness

A one-group pre-test/post-test design was employed to investigate general surgery
residents working at the University of Arizona (USA). The authors conclude that the combined intervention significantly reduced feelings of exhaustion after 12 months.

- Underlying Principles

Although the combined intervention was not based on any specific theoretical framework, multiple assumptions were described. The intervention assumed that enhancing the self-awareness and emotional intelligence of employees would teach them to respond effectively, rather than reacting to the stress inherent in their lives and environments, thereby reducing burnout complaints.

- The Combined Intervention

The person-directed interventions entailed activities aimed at improving the work-life balance of employees and promoting a healthy diet and exercise (none of which were explained). One organization-directed intervention was implemented, which entailed a range of team-building activities (none of which were explained). The overall aim of the person-directed and organization-directed activities was to improve the mental, physical and social health and well-being of employees, and this was assumed to reduce burnout complaints. The employees were asked to evaluate the program based on certain predefined indicators (which were not based on the underlying principles). The results indicated that, in general, the employees perceived the program as positive. For example, 96% strongly agreed that the program created cohesiveness and a sense of community among the workforce.

- Mediators of Change

None of the underlying principles (e.g., enhancing employee self-awareness) was evaluated with regard to the change in burnout complaints, nor were the goals of the intervention (e.g., improving their health) or the predefined outcomes (e.g., promoting a sense of community).

Study 8

- Effectiveness

A one-group pre-test/post-test design was employed to investigate staff working in an alcohol ward in England. The authors conclude that the combined intervention led to a significant increase in personal accomplishment after one month.

- Underlying Principles

The combined intervention was based on the Demand-Control Support Job Stress Model, with an emphasis on enhancing social support among the workforce in order to improve their ability to cope with stress. Social support was assumed to act as a buffer against the possible adverse health effects of excessive psychological demands or stressors. Employees were involved (although it was not clear how) in identifying stressors, which were then used as a foundation for developing the combined intervention (although it was not clear how). The stressors identified by the staff included group work, dealing with complex clients, and client aggression. The practice of working with whole teams was assumed to have a positive effect on the entire team culture, in addition to introducing bottom-up working practices aimed at reducing stress (none of these aspects were explained).

- The Combined Intervention

Although the combined intervention focused on working with the whole team, elements in training also addressed both individual and organizational issues. In practice, the combined intervention consisted of two days of training, with two weeks between the training days. The focus of the first day of the training was on "Managing stress at the individual, team, and organizational level," and the second day was devoted to understanding "the causes and consequences of aggression." One aspect of the training consisted of identifying the common antecedents of episodes of violence from a comprehensive perspective, including client-related, environmental, team, and organizational factors, although none of these factors were explained. The team members then received assistance in undertaking a comprehensive risk assessment (although it was not clear what was being assessed) and strategies for implementing interventions to address the risks (these were also not explained).

- Mediators of Change

None of the underlying principles (e.g., the role of social support or employee participation) was evaluated with regard to the change in burnout complaints.

Study 9

- Effectiveness

A one-group retrospective pre-test/post-test design was employed in the USA to investigate staff representing multiple healthcare professions (e.g., nursing, pharmacy, housekeeping). The authors conclude that the combined intervention resulted in a significant decrease in exhaustion and a significant increase in professional

accomplishment.

- Underlying Principles

No specific theoretical framework was mentioned, nor was any rationale underlying the combined intervention.

- The combined Intervention

The combined intervention consisted of three sessions (workshops) of three hours each, focusing on team building (positive human connections), communication skills, building self-esteem, and stress management. Building self-esteem and stress management are person-directed interventions, while team building is an organization-directed intervention. For example, the team-building exercises included the construction of straw towers in small groups, a values-clarification exercise, and the preparation and performance of a musical number in which each person acted as an instrument. Examples of stress management techniques included breathing exercises, guided visualization, and a shoulder massage with a co-worker.

- Mediators of Change

Some mediators of change were subjected to qualitative exploration and quantitative description, expressing how often a particular theme was mentioned. For example, employees reported that the combined intervention resulted in better communication with co-workers (24%), a better working atmosphere (53%), and increased self-esteem (18%). However, none of these mediators was evaluated with regard to changes in burnout complaints reported by the employees.

Study 10

- Effectiveness

A controlled clinical trial design was employed in the Netherlands to investigate self-employed individuals (i.e., business owners) who were currently on sick leave due to burnout. Participants in the combined intervention partially returned to work 17 and 30 days earlier than did their counterparts in the person-directed intervention and the control group. For full RTW, this difference was approximately 200 days. All of these differences were statistically significant. When controlling for gender, age, education, and number of employees, however, the effect of the combined intervention was no longer significant for partial RTW, although it did persist for full RTW.

- Underlying Principles

No specific theoretical framework was reported. The intervention had a strong focus on graded activity. More specifically, it involved a process of gradual exposure, in which the participant's activation was increased through small steps. Six labor experts participated in the study. All of these experts received training in a brief stress management intervention based on cognitive-based therapy. The stress management part of the intervention consisted of psycho-education on work stress, the registration of symptoms and situations, relaxation, self-help books on rational emotive behavior

therapy, and assignments involving writing and time management. In addition, the labor experts advised the participants with regard to work processes and provided suggestions for reducing workload and job demands while increasing decision latitude. These components were intended to foster at least partial work resumption.

- The combined Intervention

The combined intervention consisted of five to six sessions of approximately one hour, twice a week. A person-directed (based on Cognitive Based Therapy) intervention was combined with an organization-directed intervention focusing on reducing stressors at work (e.g., reducing workload).

- Mediators of Change

None of the underlying assumptions (e.g., increasing the employees' decision latitude) was either empirically tested or evaluated with regard to change in RTW.

Discussion

Summary of Findings

This study consisted of a systematic assessment of combined interventions with regard to their effectiveness, theoretical assumptions, and mediators of change. Of the 4110 abstracts obtained in a literature search (published before September 29, 2019), 10 studies (reporting the effects of 9 combined interventions) fulfilled the predefined inclusion criteria. It should be emphasized that all 9 combined interventions were effective (at least to a certain extent) in facilitating rehabilitation. With regard to the reduction of burnout complaints, the combined interventions led to greater improvement in exhaustion and cynicism (or depersonalization) in both the short term (after 4 months) and the long-term (after 12 years) than in professional efficacy (or personal accomplishment). In terms of promoting RTW, the combined interventions showed long-term effects on the promotion of full RTW.

Surprisingly, very few of the studies devoted much attention to evaluating potential mediators of change that could properly explain their results and clarify why and how the combined interventions did or did not work. Moreover, only three studies included any empirical (or other) test for mediators of change in order to explain how the combined intervention worked. These studies suggest that enhancing employees' sense of job control (i.e., decision authority over their jobs), social support (e.g., positive feedback from supervisors), participation in decision-making (e.g., selecting stressors and mismatches), and reducing workload can facilitate rehabilitation among employees who are currently either working or absent on sick leave. The results of the three studies involving empirical evaluation of factors mediating change are supported by the fact that all of the studies share specific theoretical (or other) assumptions concerning the importance of involving employees in decision-making, enhancing their job control and

social support, and reducing stressors (e.g., high workload).

Scientific Implications

To our knowledge, this systematic review is the first to focus on combined interventions. Although previous reviews have included combined interventions [**40**,**41**], the methods underlying their reviews have exhibited many limitations (e.g., using only two or three electronic databases; limiting the search period from 1995 to 2005; and not assessing study quality). The present review addresses these limitations by using seven relevant databases, expanding the search to include all studies since the emergence of the burnout concept (>1970), assessing the risk of bias, and including only studies using the MBI or RTW to ensure comparability with regard to the outcome of interest. In addition, two of the "combined interventions" addressed in the review by Awa, Plaumann and Walter [**41**] were organization-directed (professional supervision [**42**] and work-shift evaluations [**43**]) rather than combined interventions, and they were thus not included in the present review. Additionally, none of these reviews attempted to identify and describe the mediators of change to explain how combined interventions worked, which was an additional aim of this study. Hence, this systematic review strongly builds upon and complements research on how to effectively facilitate rehabilitation, that is, reducing burnout complaints and promoting a full RTW.

As indicated by the results of this review, the combined interventions did not lead to much improvement in two specific dimensions of burnout: personal accomplishment and professional efficacy. There has long been uncertainty with regard to including these two aspects as dimensions of burnout, as they could be interpreted as either a cause or consequence of burnout [**44**]. On the one hand, exhaustion might indicate a lack of personal accomplishment (or professional efficacy). On the other hand, a lack of efficacy (or accomplishment) could result from poor performance due to exhaustion [**45**]. It would therefore be interesting for future studies to provide further clarification on the role of personal accomplishment or professional efficacy as either a cause or consequence of burnout.

With regards to the mediators of change (whether measured directly or merely described), the results are very much in line with central theories on burnout. For example, studies inspired by the Job Demands-Resources Model consistently show that job resources (e.g., job control, social support) are not only negatively related to burnout but also associated with multiple positive outcomes, including enhanced job satisfaction and organizational commitment [**16**,**46**]. In a similar vein, a recent cross-sectional study demonstrates that job control and social support are strongly correlated with the ability of employees to participate and be productive in a sustainable and meaningful way [**47**]. At the same time, the results of this review indicate that reducing the workload (i.e., a job demand) can also influence burnout complaints, thus suggesting that interventions should aim to build job resources while addressing stressors. Future intervention studies

should continue to clarify the role of job resources and stressors with respect to reducing burnout complaints.

The studies evaluated in this review also reflect the expectation that facilitating partial RTW can predict full RTW. These expectations were not supported by empirical evidence. One possible explanation could be that employees who failed to attain a sustainable RTW toward the end of the follow-up period had more severe burnout complaints and therefore needed a longer period of partial RTW. However, study 10 showed that participants in the combined intervention had faster RTW than participants in the control group, while their burnout complaints did not improve. This indicates that reducing burnout complaints and facilitating a sustainable RTW cannot be seen as a single phenomenon, which is in line with previous studies [**48**].

This review assessed studies involving employees from a variety of professions (e.g., healthcare, construction work) and, therefore, a variety of working contexts. Although the results suggest that combined interventions have beneficial effects on reducing burnout complaints and promoting full RTW for multiple professions, they do not necessarily mean that a given intervention will produce the same effects in a different working context. Similarly, this review also includes a study involving self-employed people, who were thus also business owners. Self-employed individuals differ from employees in several aspects. For example, studies have demonstrated that self-employed people are characterized by strong levels of job control, job insecurity, decision latitude, work demands, intrinsic motivation to work, and low levels of social support in their work [**49**]. Although the effect of the combined intervention aimed at facilitating full RTW among self-employed people (Study 10) was promising, it does not mean that employees (who are not self-employed) on sick leave would automatically benefit from the same combined intervention.

Practical Implications

The results of this review suggest that combined rehabilitation interventions are effective (at least to a certain extent) in facilitating rehabilitation among employees who are currently working or absent on sick leave. In general, all of the studies share common theoretical (or other) assumptions concerning the importance of involving employees in decision-making and enhancing their sense of job control and social support. These assumptions are further supported by the results of three studies that involved the empirical evaluation of such mediators of change with regard to burnout complaints. From the perspective of promoting workplace health, it could be worthwhile to build such resources while addressing job demands (e.g., excessive workload) in order to alleviate burnout complaints. Reflecting on the mediators of change—particularly participation in decision-making and social support—the results suggest that simply paying attention to employees (i.e., listening to them and addressing their needs) is important to the facilitation of rehabilitation. This knowledge could be applied directly in practice.

Limitations

Although all combined interventions were effective in facilitating rehabilitation, nine studies had a high risk of bias, and one study was assessed as having a moderate risk of bias. This substantial risk of bias has a direct impact on the robustness of the findings of this review. More specifically, it is unclear whether the effects presented in a given study were due to the combined intervention or to the study design as such. The results of this review should therefore be interpreted with caution. It should be emphasized that the risk of bias assessment does not judge the "quality of the included studies," rather, it aims to identify possible bias based on the context in which the studies were conducted, thereby assessing the "quality of the evidence." Future studies are challenged to enhance the robustness of the study designs, while taking into account the complexity of the combined interventions, which is a common challenge in (workplace) health promotion research [**50**].

It should also be noted that the interventions addressed in this review were only generally described in terms of content and specific theoretical (or other) assumptions. Future studies should therefore provide more in-depth information on the theories or assumptions on which the interventions are built, as well as on how (and by whom) the interventions were developed, implemented, and evaluated, in addition to providing clear definitions for mediators of change. In addition to the quantitative measurement and assessment of mediators of change with regard to their effects on the outcome variables, it would be interesting to evaluate such mediators in qualitative terms. For example, the quantitative measurement and analysis of participation in decision-making do not say anything about how, why, and under which circumstances employees were involved. In addition to evaluating the effect of combined interventions on rehabilitation, therefore, research on burnout could benefit from qualitative process evaluation, which could provide further information on why a combined intervention did or did not work. Finally, the duration and intensity of the combined interventions differed substantially, ranging from three sessions of three hours each to six monthly sessions of four hours each. It is therefore impossible to determine exactly when a given intervention will work. This review is subject to several limitations. Publication bias is likely to have influenced our results. Given that studies resulting in negative or no effects are often not published, we were obviously unable to include them in our review. Similarly, because our review includes only articles published in English, it overlooks any relevant studies published in other languages. Also, although the MBI is used as the golden stand for measuring burnout, it is also known to have multiple conceptual, technical, and practical issues [**45**]. For example, it does not measure all burnout symptoms (e.g., depressive feelings and psychosomatic tension complaints), which are often the first reasons why employees seek help. Recently, a new instrument—the Burnout Assessment Tool (BAT)—has been developed to address the issues associated with the MBI [**45**]. For this reason, we also attempted to retrieve studies that evaluated combined interventions

using the BAT by conducting an additional search on October 10, 2019. Unfortunately, this search did not reveal any additional studies. Finally, though the tool used for the risk of bias assessment has been evaluated as strong [**28**,**29**], we did not systematically test the instrument for failure in similar studies, and we do not have evidence to state how and where the tool breaks down; that is, we cannot be certain on its validity and reliability.

Conclusions

All nine combined (both person-directed and organization-directed) interventions showed a positive effect on facilitating rehabilitation among employees who are currently working or on sick leave due to burnout. Although the risk of bias in the included studies is considerably high, the results show that the mediators of change addressed—job control, social support, participation in decision-making, and workload—contribute to employees' rehabilitation. Further studies are challenged to enhance the robustness of the study designs while incorporating the complexity of combined interventions, preferably by adding qualitative process evaluations besides measuring effects. In addition, research on burnout interventions could benefit from qualitative process evaluations aimed at unravelling how and why interventions do or do not work. Finally, with caution, workplace health promotion practitioners are encouraged to facilitate rehabilitation by building job resources while eliminating stressors in the workplace.

Supplementary Materials: The following are available online at **https://www.mdpi.com/1660-4601/17/1/55/s1**, Table S1: The PRISMA Checklist; Table S2: The Assessment of Bias Scores of the Included Studies.

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6

Chapter 6

Seizing and realizing the opportunity: A salutogenic perspective on rehabilitation after burnout

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Abstract

Background: Most research on burnout has focused on its antecedents, correlates, and consequences. However, little empirical attention has been paid to what constitutes successful rehabilitation after burnout, especially among young employees.
Objective: The present study empirically examined resources supporting successful rehabilitation after burnout among young employees (between 18 and 35 years of age) from a salutogenic perspective.
Methods: Interpretative phenomenological analysis was used as a methodological framework to explain the experiences of young employees underlying their rehabilitation after burnout.
Results: The analysis showed that the rehabilitation process comprises four phases: 1) facing the crisis; 2) addressing the root causes; 3) seizing and achieving the opportunity; and 4) remaining at work. Essential overarching resources facilitating successful recovery after burnout included receiving social support from family, friends, and colleagues, as well as having a feeling of control over the rehabilitation process. Participants learned to be aware of potential pitfalls that could trigger burnout symptoms, while having confidence in their ability to prevent burnout from reoccurring. These continuous learning processes were experienced as a prerequisite to remaining at work.
Conclusions: Receiving social support and experiencing a feeling of control over the rehabilitation process appear to be key resources in facilitating a stable, meaningful return to work after burnout.

Introduction

Burnout is defined as "a work-related state of exhaustion that occurs among employees, which is characterized by extreme tiredness, reduced ability to regulate cognitive and emotional processes, and mental distancing. These four core dimensions of burnout are accompanied by a depressed mood as well as by non-specific psychological and psychosomatic distress symptoms" [1]. Burnout leads to adverse psychological consequences (e.g., hospitalization for mental disorders), physical effects (e.g., musculoskeletal pain), and occupational consequences (e.g., high sick leave and replacement costs) [2]. In the Netherlands, burnout is a significant cause of absenteeism, with associated sick leave costs amounting to €2.6 billion annually [3]. Burnout complaints have risen substantially during the last decade, particularly among young employees between the ages of 18 and 35 years [4]. For this age group, burnout complaints have increased from 25% in 2014 to 33% in 2019 [4, 5], with the actual number of days on sick leave due to burnout rising from 7.8% in 2014 to 9.3% in 2019 [6]. Most studies on burnout have focused on predictors and outcomes [7–9], paying little attention to what constitutes successful rehabilitation (i.e., reducing burnout complaints, facilitating return to work) [10, 11]. Given the recent substantial increase in burnout complaints and duration of sick leave among young employees [4, 5], it is essential to find strategies to support rehabilitation following burnout.

Although burnout is prevalent across the globe [2], each country has its own rehabilitation system [12]. In the Netherlands, the Occupational Disability Act of 2005 shifted the focus from assessing the disabilities of employees to evaluating their remaining capabilities, with an emphasis on prevention and early intervention [12]. The rationale behind this strategy is that initial assessment promotes rehabilitation, thereby allowing employees to return to work quickly, whether with their current employers or elsewhere. As a robust incentive to speed up the rehabilitation process, employers are obligated to pay for sick leave for up to two years. Finally, private enterprises (i.e., "rehabilitation bureaus") specialized in assisting rehabilitation can provide advice and coaching to employers concerning how to develop and implement a rehabilitation plan [12].

Recent literature reviews [10, 13–16] have consistently demonstrated that the effects of burnout interventions are not sustainable and that they are suboptimal in facilitating rehabilitation. Interventions seem to reduce burnout complaints to only a limited extent, with a tendency to facilitate partial rather than a full return to work [10, 13–17]. More specifically, according to a recent longitudinal study [18], the reduction of long-term burnout complaints and the promotion of RTW are two distinct and independent processes, neither of which is well understood. The relative ineffectiveness of rehabilitation interventions and the contradiction between alleviating burnout complaints and facilitating RTW suggest that additional research is needed in order to

understand what constitutes successful rehabilitation.

Only a handful of studies have aimed to explain successful rehabilitation after burnout [19], with each study focusing on a specific burnout-rehabilitation program [20, 21]. The results of these studies emphasize the need to address both personal (e.g., coping skills) and work-related factors (e.g., reducing workload), while taking into account the specific needs of individual employees. This knowledge nevertheless provides only a partial explanation of successful recovery from burnout, as the effects of rehabilitation programs are not sustainable in the long term [10]. Moreover, a focus on predefined or standard rehabilitation programs does not allow for the examination of other factors that may facilitate successful rehabilitation. Areas that have yet to receive sufficient research attention include what happens after the end of a rehabilitation program and how employees remain at work. It would therefore be worthwhile to explore the general experiences underlying young employees' recovery from burnout, without explicitly focusing on any specific rehabilitation program. To this end, the present study is intended to investigate successful rehabilitation after burnout among young employees in the Netherlands.

Salutogenic Perspective on Rehabilitation After Burnout

This study adopts a salutogenic perspective on rehabilitation. Unlike the pathogenic perspective, which focuses on factors that contribute to disease and illness, the salutogenic perspective explicitly focuses on understanding and explaining factors that support health and well-being [22]. The theory was developed by Antonovsky (1923–1994), who assumed that stressful events are an inherent part of life and that the development of health is dependent on the ability of individuals to adapt to what happens to them [23]. In this study, burnout is regarded as one such stressful event, focusing on how young employees recover their ability to rehabilitate successfully.

The ability to cope with stressful events in a health-promoting way reflects the key concept of salutogenesis: the sense of coherence (SOC) [22]. The concept of SOC refers to the extent to which people experience life as comprehensible, manageable, and meaningful [22]. An ample body of research has provided support for the notion that employees with a strong SOC can cope effectively with stressful events in ways that promote health [24, 25]. For example, strong SOC scores have been shown to predict and explain high levels of workplace well-being and low levels of burnout complaints [26-27]. The base of evidence supporting the positive effects of strong SOC on employee health and well-being is thus substantial [24]. The concept of SOC might therefore constitute an essential variable in the process of rehabilitation after burnout.

Prerequisites to the development of a strong SOC include an array of factors that have been identified as generalized resistance resources (GRRs) [28] and specific resistance resources (SRRs) [29]. A GRR is "any characteristic of the person, the group, or the environment that can facilitate effective coping" [23]. While GRRs are used

to deal with stressors in various contexts, SRRs differ from GRRs, in that they are specific to particular stressful events [29]. By successfully coping with stressful life events (e.g., by changing jobs), employees continuously learn to identify, mobilize, and use (or re-use) GRRs/SRRs, thereby strengthening their SOC [28, 29]. In this study, GRRs facilitate rehabilitation but can also be applied in non-working contexts (e.g., receiving social support from family) and can be used to cope with many different kinds of challenges. In contrast, SRRs support the ability to cope with specific challenges related to the consequences of being burned out (e.g., using professional help to prevent the recurrence of burnout). According to an increasing base of evidence, GRRs/SRRs enhance SOC levels and vice versa [30, 31]. It is, therefore, interesting to identify GRRs and SRRs that support the successful rehabilitation of young employees after burnout.

Method

Study Design

This study draws on the methodological framework of interpretative phenomenological analysis (IPA) [32], thereby adopting a qualitative approach [33] to explore how young employees perceive the resources that support successful rehabilitation after burnout. The salutogenic perspective was then applied as a framework for examining whether the resources identified are GRRs or SRRs.

Participants

Young employees (18–35 years of age when upon diagnosis of burnout) who have successfully rehabilitated after burnout were recruited through social media (e.g., Facebook), as well as through one general practitioner. Successful rehabilitation was defined as being employed in a situation that the participant considered satisfactory, with no desire to change jobs anytime soon. Ten prospective participants volunteered, and nine participants were selected based on the inclusion criteria (Table 6.1). The other young employee decided not to participate in the study because of an adverse private situation. One of the nine participants that participated ultimately turned out not to be rehabilitated but still allowed the identification of relevant resources. This participant was therefore included. The nine participants who were interviewed varied in terms of the rehabilitation period, occupation, and gender, but all were highly educated. Age at the time of burnout diagnosis ranged from 23 to 32 years, and age at the time of interview ranged between 26 and 38 years.

Table 6.1. Participant overview.

Name[a]	Gender	Working status	Occupation before burnout	Occupation at interview	Rehabilitation duration - in months	Interview time - in minutes
Deborah[b]	F	100% (5 days per week)	Scientist	Change agent living environments[d]	12	120 + 50[F]
Maya[b]	F	80% (4 days per week)	Marketing / consultant	Marketing / consultant[c]	14	75 + 55[F]
Jack[b]	M	80-100%	Financial consultant	Company owner (advisor workplace health)[d]	5.5	125
Clara[b]	F	100%	Marketing at a university	Scientist[c]	18	97 + 45[f]
Charles[b]	M	100%	Project leader, railway construction	Project leader, railway construction[c]	6	96 + 43[F]
Anna[b]	F	80-100%	Traineeship Ministry of Health, Welfare and Sport, advisor	Company owner (lifestyle coach)[d]	18	117
Ivanna	F	80-100%	Scientist	Scientist[d]	18	109 + 52[F]
Yasmine	F	100%	ICT specialist	Company owner (advisor workplace health)[d]	3	79
Yoshito	M	20-40%	Scientist	Scientist, lecturer	>15[e]	154

Note. The participants' ages at the time of the interviews were: 32, 27, 29, 26, 38, 29, 27, 31, 26 (to protect participants' identity, the ages are not mentioned in the same sequence as the interviews). [a]Participants were given fictitious names; the first letter of the name represents the order of the interviews; [b]Contribution master student; [c]Change of job tasks/responsibilities; [d]Change of organization; [e]Still rehabilitating; [f]Participated in the participant check.

Data Collection

Each participant was asked to prepare a timeline [34], which they subsequently used as support in the visual and chronological organization of experiences relating to the development of burnout and rehabilitation. Although the study focuses primarily on experiences concerning rehabilitation after burnout, the experiences that the participants described with regard to developing burnout and the consequences of burnout on their lives created a more comprehensive picture and facilitated an open dialogue about rehabilitation. Participants were free to determine how they would prepare the timeline, ranging from small drawings to large posters, which were then used to guide the interviews. In addition to allowing participants to share their personal stories chronologically, the timelines fostered a reflective dialogue [32]. The participants' explanations of their timelines allowed in-depth probing about particular events,

feelings, and experiences underlying their recovery from burnout.

The interviews were conducted between October 2019 and February 2020. To help the participants feel at ease, the interviews were conducted in private locations. Five of the participants preferred to be interviewed in their homes, three chose to visit the university, and one requested to be interviewed in the workplace. For six of the interviews, a Master's student (female) assisted the principal investigator (male) in conducting the interviews, which allowed the participants to choose who would ask the questions. In all six cases, participants preferred that both researchers ask the questions. Audio recordings were made of the interviews, which lasted an average of 108 minutes. Additional data were collected through a participant check [32] with five respondents in May and June 2020. The participant check consisted of discussing the preliminary figure (i.e., the proposed model) of the results by asking the participants to reflect on the extent to which they could resonate with the model. The input from this reflective dialogue was then used to make final adjustments to the model and results.

Data Analysis

The analytical approach consisted of two phases. Following the recommendations of Pietkiewicz and Smith [35], the analysis was conducted manually in order to allow in-depth engagement with the data. The first phase entailed a case-by-case ideographic analysis. This was followed by the second phase, which consisted of cross-case analysis based on IPA [32]. The first phase entailed four steps performed by the principal investigator: (a) before the iterative and inductive cycle started, the interview recordings were listened to multiple times while (b) reading and re-reading the transcripts. Emergent themes (c) at an explanatory level were added to the transcript, after which (d) the impact of burnout on the lives of the participants and how they had rehabilitated after burnout were described. Before these iterative steps, all authors pilot-tested the steps independently based on two interviews, which resulted in similar findings. In addition, the Master's student who had assisted with the interviews also assisted with the analysis of the first four interviews. During the second phase, overarching themes and rehabilitation phases were identified by searching for patterns across cases [32]. All researchers contributed to the analysis, as well as to the discussion of themes and abstractions.

The two inductive phases were followed by deductive analysis, in which the findings were explored from the salutogenic perspective. The data were reorganized into components of the salutogenic model of health, focusing on resources and classifying them as either GRRs or SRRs. This process included several iterations between the transcripts (or audio recordings) and codes, with the goal of understanding the broader contexts of the participants, as well as their original statements and meanings [32, 35]. Accordingly, the main findings and relevant quotations were extracted. The participant check is an essential step when using IPA [32]. In this check, the first author facilitated a reflective dialogue,

in which the participants were asked to reflect on the extent to which they could resonate with the findings, thereby enhancing the reliability of the results [32].

Ethical Considerations

The methodology for this study was approved by the Social Sciences Ethics Committee (Wageningen University & Research) on June 13, 2019. Prior to the interviews, the first author telephoned or visited the prospective participants to inform them about the aims of the study. The researchers were aware that the interviews involved a potential risk of re-traumatization by asking the participants to revisit what they had experienced. The participants were informed about this possibility and were told that they could contact the interviewer at any time to arrange a meeting with an occupational health physician if needed. In addition, the researcher contacted the participants by telephone one week after the interview to ask how they were doing. Each participant provided signed informed consent before the interviews took place.

Results

In this section, the findings on the successful rehabilitation after burnout among employees are presented. Improving understanding concerning how GRRs and SRRs contribute to successful recovery from burnout requires first explaining how young employees experience the impact of burnout in their lives, with burnout defined in the salutogenic model as a stressful life event. The participants are listed in Table 6.1, using pseudonyms to protect their identities.

Being Burned-out as a Stressful Life Event

The overarching theme of *having lost control over one's (working) life* captures the significant impact of burnout on the lives of participants. All of the participants described the experience of being burned out as terrible, characterized by a feeling of extreme exhaustion (both physically and mentally), an inability to think clearly, and an inability to control emotions. In addition, some participants reported depressive feelings, suicidal thoughts, and a range of psychosomatic distress symptoms, including headaches, panic attacks, and palpitations. All of these complaints had adverse effects on the health and well-being of the participants, as well as on their ability to work, thereby resulting in feelings of hopelessness with no perspective on the way out. As explained by Maya:

> *Being burned out felt like a volcano eruption…destroying my health, my well-being, and my life. I had no hope that I would ever recover, and I could not even think about work, let alone returning to work. I have never felt so weak, tired, and done with my life...I was utterly hopeless, and I had no perspective on a possible way out.*

GRRs and SRRs Supporting Rehabilitation After Burnout

The analysis revealed several interesting parallels among the rehabilitation processes of the participants, despite differences in situation and context. The rehabilitation process can be categorized into four phases: 1) facing the crisis; 2) addressing the root causes; 3) seizing and achieving the opportunity; and 4) remaining at work (Figure 6.1). Two GRRs (*receiving social support* and *a feeling of control*) were identified as essential drivers underlying the overall rehabilitation process. In Phases 1 and 2, the emphasis lies on coping with the *consequences of burnout*, whereas Phases 3 and 4 entail a *learning process* aimed at achieving and sustaining a stable and meaningful working life.

Phase 1: Facing the Crisis

After being diagnosed with burnout, participants first needed to *accept the situation* (GRR) of not being able to do anything at all, let alone return to work. This was difficult for many respondents, primarily because none of them had expected that burnout would ever happen to them. Deborah explains how her perception of burnout changed from seeing it as something that happens only to weak people to accepting all the consequences of being burned out and the need for change:

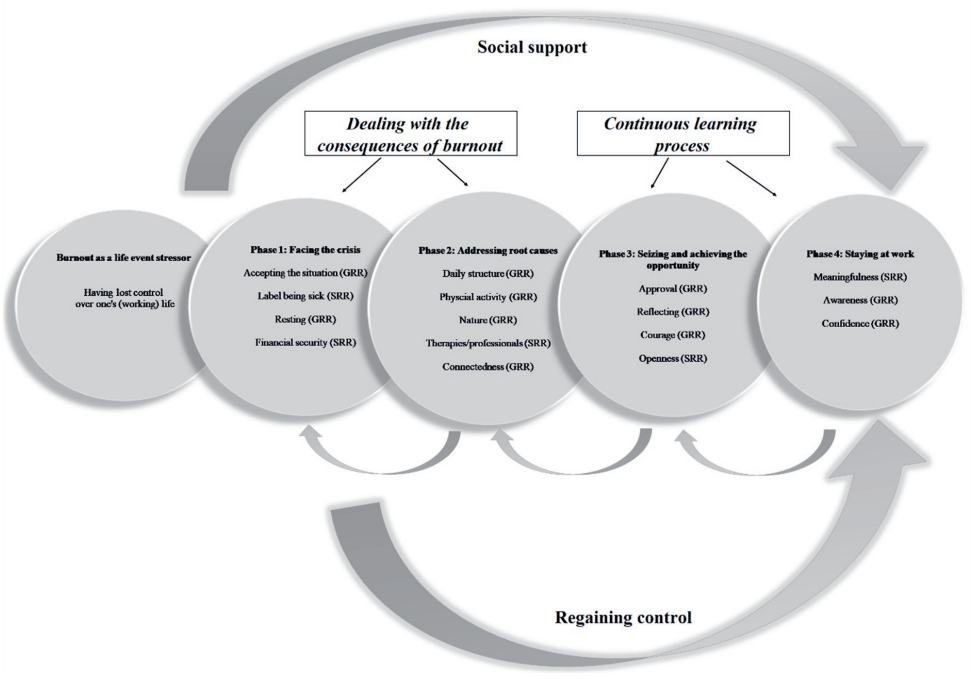

Figure 6.1. Results of the analysis showing the four rehabilitation phases and which GRRs / SRRs facilitate successful rehabilitation from burnout among young employees.

[before the burnout]...When people talked about burnout, I always thought, how can you be like that…what kind of loser are you?

[being burned-out]...I felt terrible and completely hopeless...It made me realize that something had gone terribly wrong, and I was surprised that I had not been able to see this coming...I didn't know how, but knew I had to recover and learn to prevent this situation from happening again.

Related to accepting the situation is the feeling of "*being or feeling like a patient,*" which can be both beneficial (SRR) and detrimental to the rehabilitation process. The experiences of Yoshito and Ivanna illustrate this discrepancy.

[Yoshito]…when I was burning out, no one took me seriously, and they thought I was overreacting. After receiving the burnout diagnosis, it was liberating for me, as it provided confirmation that I am not wrong or crazy…I suddenly received more support from friends and in-laws.

[Ivanna]…I never liked the label of burnout…Not only because burnout was controlling my entire life, but also because it caused even more stress based on "being-sick or being a patient"…This somehow amplified the negative thoughts.

While coming to accept the situation, the participants required a large amount of *rest* (GRR), which was an inevitable consequence of being completely exhausted (both mentally and physically). It was thus not a choice. In practice, taking rest entailed sleeping for many hours during the day and doing little to nothing at all. This is explained by Clara, who experienced burnout only a few months after starting her dream job as a junior scientist:

I couldn't do anything more than sleep and cry in my bed…I just kept asking, "Why is this happening to me?"…I couldn't even watch Netflix series or movies, nor could I read books…I knew I had to work on myself in order to return to work, but I couldn't do anything at all. That was hard, but it also felt good to allow my body to rest…It was not a choice; my body forced me to do so…especially after fainting at work and being brought home by colleagues.

Most respondents had not been concerned about their financial situations, as they received economic benefits through the Dutch public welfare system, which covered most of their formal salary during the first year (SRR: *financial security*). The participants were required to maintain contact with their employers or occupational health physicians. This was not the preference for most of them, however, as they felt

that they needed time to recover and did not even think that much about their jobs (or returning to work). Instead, during this crisis phase, the participants experienced *social support* (GRR) from people close to them (e.g., family and friends) throughout the entire rehabilitation process. As explained by Anna:

> *I would never have recovered successfully from my burnout without the support of my boyfriend, friends, and family…I was completely lost, and I didn't even dare to believe that anything would ever go to back to normal again…Their support and advice were crucial to my recovery.*

Phase 2: Addressing Root Causes

For all of the participants, the process of addressing the root causes of burnout started with creating a *daily structure* (GRR). All of the participants were entirely drained by doing little to nothing, and they believed that regaining a certain rhythm would be the first step towards successful recovery. In practice, this daily structure consisted of being *physically active* (GRR), as even easy cognitive tasks (e.g., reading books) were not possible. Activities included walking, baking cakes, or gardening—always followed by a period of rest. More specifically, most participants chose to be in *nature* (GRR), as it provided a setting in which they could rest while being physically active and away from intense environmental stimuli (as in a busy supermarket). Ivanna reflects:

> *I couldn't even go shopping or cross a busy street…I really needed to escape to nature, as there was not so much noise or so many people…Being in nature became part of the daily structure. I did a lot of walking, which made me feel at ease and less stressed… However, I needed to take rest after walking in nature, as it was a demanding activity for my body.*

While establishing daily structure, participants combined several *therapies and professional help* (SRR) to address the root causes underlying their burnout. In practice, participants consulted physiotherapists and haptonomists, aiming to learn how to recognize and understand what they were feeling in their bodies and minds. All of the participants stated that, throughout their lives, they had ignored—or had not been able to recognize—signals from their bodies. They noted that this was one of the causes of their burnout. By reconnecting with their bodies and minds, participants could better understand the signals that their bodies and minds were giving them, and this made them feel more relaxed than they had been before these therapies. Participants followed other courses as well (e.g., yoga, mindfulness, and meditation) in order to integrate being connected with their bodies and minds into their daily structures. At the same time, participants consulted psychologists to identify and address the causes underlying their burnout. In most cases, these causes were not related to the working context. In

general, the participants wanted to prove their worth (both to themselves and to others). This need was rooted in low self-confidence and perfectionism resulting from past life experiences, which facilitated detrimental thinking and behavioral patterns, eventually resulting in burnout in the workplace. The "self-tailored" combination of therapies (both professional and otherwise) was experienced as essential to the recovery process, as explained by Deborah:

> *The cognitive-based therapy from the psychologist would never have been a success if I hadn't learned to listen to my body and understand what I'm actually feeling... At the psychologist's office, I was challenged to relive painful moments from my past, and I realized that I had never dealt with my feelings in a healthy manner… This [realization] would not have been possible if I had not known how to identify and understand my feelings in my body and mind…It taught me to listen to what I want and how I feel, rather than to what other people expect from me.*

For most participants, daily structure, physical activity, therapies, and professional help created a *feeling of control* (GRR) over the recovery process. In other words, they felt that their ability to return to work would depend on the actions that they took to work on the root causes underlying their burnout. The participants, therefore, had a desire to *reconnect* (GRR) with the workplace. Most workplaces offered adjustments to participants who were returning to work, including a gradual increase in working hours and a temporary change in tasks. These participants perceived these adjustments were perceived as beneficial to the rehabilitation process, as their employers and colleagues provided both social support and understanding for their reduced ability to work. While some participants (e.g., Maya) were able to work 2–20 hours per week with no significant obligations, responsibilities, or deadlines, however, others (e.g., Anna) felt that they had no leeway for change in their tasks, thereby resulting in an immediate relapse to Phase 1:

> *My employer was very flexible about building up the hours gradually, but not about changing my tasks...I had the same responsibilities and hard deadlines, which forced me to do more than I actually could…I was not feeling happy about that, but did it [anyway], because it was expected of me…At that time, I didn't listen to what I actually wanted, and this eventually led to a relapse to being completely burned-out.*

Phase 3: Seizing and Achieving the Opportunity

Most participants started to return to work gradually, performing different tasks than they had before the burnout, with their tasks being customized to their specific capacities, needs, and limitations. At the same time, participants *approved* (GRR) of their "new selves," as Phase 2 had taught them what had gone wrong before the burnout, and they did not wish to end up in the same situation again. Accordingly, returning to work also

provided a mirror that allowed participants to *reflect* (GRR) on their previous, current, and desired job situations, as well as on ways of working. Jack explains:

> *After returning to work, I did not understand why everyone was working as they were…I realized that I had been the same way before: working very intensely, with only short breaks (if any at all) and then going home completely exhausted…I did my work very well, but I did not experience meaningfulness…and I was tired of all the procedures and hierarchal layers within the organization...I realized that I wanted to start my own company.*

As a result of these insights, participants exhibited the *courage* (GRR) to implement real changes, with the goal of achieving a stable and meaningful return to work, aligned with the new self. Most participants changed their entire occupations and jobs. Even participants returning to the same employer made substantial adjustments to their ways of working, as illustrated by Clara:

> *It's not about how many hours you work, but how you work…My daily structure has changed completely. I get up, work at home, or go to a meeting, watch some series, have lunch with friends, do some sports and nothing more…Although the project deadlines will never change, I've changed the way in which I meet them. Working fewer than 40 hours makes me work more productively than the 40 hours in my contract…In academia, this way of working is quite unusual: my colleagues work from 8 to 5, plus overtime. I don't care what others think about the new me…This feels so good to me, I am living my life rather than being dominated by the burnout or the expectations rooted in the academic system.*

Returning to work was perceived as easier by participants who were able to be *open* (SSR) about their experiences with their employers. The explanations from Ivanna and Clara indicate why this is important to successful rehabilitation:

> *Ivanna [who was not able to share her experiences with her employer] Even though I don't care that much about what other people think about me…It would be nice if my supervisors would understand what I'd been through in order to prevent burnout from recurring, as I genuinely love my job…My supervisors, however, think that people with burnout do not belong in science, so I chose not to share it–not even with my new colleagues.*

> *Clara [who was able to share her experience with her employer] I never found it difficult to share my experiences with anyone…Fortunately, my supervisors were very willing to listen to what I had experienced. They were also willing to adapt to the*

new me, even though nothing changed in my actual job or contract… The first thing on the agenda of the meeting with my supervisors is my health and well-being, which works well for my supervisors and me.

Phase 4: Remaining at Work

After making substantial changes regarding their work in Phase 3, almost all of the participants had made a stable return to work. Moreover, they perceived work as a source of *meaningfulness* (SRR), as reflected by Charles:

My working life is a source of joy…I like my new work responsibilities, colleagues, and working culture. I have learned to let go of what other people think about or expect from me, and to choose for myself…I'm not afraid to say "no" to my employer about doing specific tasks and, through discussion, we always find a satisfactory solution for both of us. I have no intention of changing my job anytime soon, although I do expect to grow further in the current organization.

Rehabilitation does not end after work has resumed. All of the participants were aware that there was a risk that burnout would recur if they were to step into the same pitfalls. Most of the participants were aware (GRR *awareness*) of the pitfalls that could trigger burnout symptoms, however, and they were *confident* (GRR) of their ability to prevent burnout from recurring. Maya provides a clear explanation:

I love the work that I'm doing. Although the working culture is still the same…I know that if I don't listen to my feelings or set limits for my colleagues, it will go wrong again…At the same time, I don't exactly know what my limits are, but I can now recognize and understand signals from my body and mind…I approach my new challenges at work with a feeling of confidence, and not with a sense of fear that it will go wrong.

Discussion

The present study is the first to use IPA and the theory of salutogenesis to investigate successful rehabilitation after burnout among young employees without focusing on any specific rehabilitation program. Recovery entails four phases: 1) facing the crisis; 2) addressing the root causes; 3) seizing and achieving the opportunity; and 4) remaining at work. Throughout these four phases, social support from friends, family, and colleagues/employer appear to be critical GRRs underlying successful rehabilitation for young employees, as does a feeling of control over the recovery process. Several resources were experienced as SRRs supporting their ability to cope with specific situations as a

consequence of their burnout. The SRRs identified by participants included receiving the burnout diagnosis and financial support (Phase 1), using a combination of therapies and professional help (Phase 2), being able to share experiences with colleagues (Phase 3), and experiencing work as a source of meaningfulness (Phase 4).

The results reveal interesting parallels with those of previous studies aimed at understanding successful rehabilitation after burnout among older employees. One particularly notable example is that social support and a feeling of control over the recovery process both serve as a driving force underlying rehabilitation [19–21]. The present study complements the existing literature by identifying specific GRRs/SRRs that facilitate coping with the consequences of burnout (Phases 1 and 2) and the continuous learning process needed in order to remain at work in a stable manner (Phases 3 and 4). The diversity of resources in each phase calls for an integrated approach in which multiple professionals (e.g., occupational health physicians, psychologists, therapists) develop customized rehabilitation programs based on the needs and desires of young employees. To this end, rehabilitation bureaus are encouraged to initiate a reflective dialogue with young employees.

The key GRR—feelings of control—relates to Rotter's [36] concept of locus of control, defined as a generalized expectation of correspondence between an individual's acts and the outcomes of those acts. While some people tend to see consequences resulting from their behavior (i.e., internal attributions), others tend to see outcomes as a result of external forces (i.e., external attributions) [37]. Previous studies have suggested that people who attribute outcomes to external forces can change such perceptions into a sense that certain outcomes (e.g., coping with an accidental injury) are under their control, as demonstrated in other rehabilitation programs [e.g., 37]. The findings of the present study support this notion, given that the young employees who were interviewed noted that they had received adequate social support from the very beginning, thus facilitating a sense that the recovery process was in their control. At the same time, however, the results also show that the social work environment should play a primary role in facilitating adequate social support. For example, young employees who were able to share recovery experiences with their employers were allowed more flexibility with their working schedules and tasks than was the case for those who were not able to share these experiences.

Being aware of possible pitfalls that could trigger burnout complaints, feeling confident in the ability to cope with challenges in order to prevent the recurrence of burnout complaints, and experiencing a meaningful working life is strongly related to the dimensions of SOC dimensions (comprehensibility–awareness, manageability–confidence, and meaningfulness). The rehabilitation process might thus reflect an experience that served to strengthen SOC for young employees who have recovered successfully. This is supported by a recent study, which suggests that experiencing and coping with stressful life events enhances GRRs and levels of SOC while reinforcing

optimal levels of mental health [38]. Longitudinal studies are needed in order to assess the extent to which the burnout-rehabilitation process can be regarded as an experience that strengthens SOC, in addition to identifying the GRRs/SRRs that contribute to successful rehabilitation (at least over time).

Study Limitations and Strengths

Although IPA provides a highly useful methodology for generating rich and nuanced insight into the experiences of research participants [32], some limitations should be discussed and taken into account when interpreting the results of this study (see Tuffour [39] for common limitations associated with the use of IPA). For instance, it is essential to bear in mind that IPA is fundamentally a subjective research approach [32, 39], which means that other researchers may find different results when replicating the present study. However, the participant checks indicated that the results had captured the experiences of the participants and allowed further clarification of the continuous learning process after returning to work (Phases 3 and 4), thereby enhancing the reliability of the findings. Also, the study is based only on "success cases," which did not allow comparisons with young employees who were still in the process of rehabilitating or with those who saw themselves as having recovered but who had stopped working permanently. Future studies are encouraged to pursue such comparisons. Besides the limitations, the present study addressed a pivotal knowledge gap as not many studies focused on explaining successful rehabilitation after burnout [19-21], and none focused on young employees. Finally, most studies have employed interviews using predefined interview questions, whereas interviews in the present study were guided by timelines [34] made by the participants, which inevitably allowed probing of context-specific experiences and events underlying successful rehabilitation.

Conclusions

The rehabilitation process consists of four phases (i.e., facing the crisis; addressing the root causes; seizing and achieving the opportunity; and remaining at work). Key GRRs underlying successful rehabilitation include social support from family, friends, and colleagues, along with an individual's feelings of control over the recovery process. Key SRRs include being labeled as sick and receiving financial support (Phase 1), using a combination of therapies and professional help (Phase 2), being able to share experiences with colleagues (Phase 3), and experiencing work as a source of meaningfulness (Phase 4). Phases 3 and 4 entail a continuous learning process, which enables young employees to maintain a stable and meaningful working life, thus constituting an experience that could potentially strengthen SOC.

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Chapter 7

Developing an intervention and evaluation model of outdoor therapy for employee burnout: Unravelling the interplay between context, processes, and outcomes

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Abstract

Background: Burnout is a major societal issue adversely affecting employees' health and performance, which over time results in high sick leave costs for organizations. Traditional rehabilitation therapies show suboptimal effects on reducing burnout and the return to work process. Based on the health-promoting effects of nature, taking clients outdoors into nature is increasingly being used as a complementary approach to traditional therapies, and evidence of their effectiveness is growing. Theories explaining how the combination of general psychological support and outdoor-specific elements can trigger the rehabilitation process in outdoor therapy are often lacking, however, impeding its systematic research.

Aim: The study aims to develop an intervention and evaluation model for outdoor therapy to understand and empirically evaluate whether and how such an outdoor intervention may work for rehabilitation after burnout.

Methodological approach: We build on the exemplary case of an outdoor intervention for rehabilitation after burnout, developed by outdoor clinical psychologists in the Netherlands. We combined the generic context, process, and outcome evaluation model and the burnout recovery model as an overarching deductive frame. We then inductively specified the intervention and evaluation model of outdoor therapy, building on the following qualitative data: semi-structured interviews with outdoor clinical psychologists and former clients; a content analysis of the intervention protocol; and reflective meetings with the intervention developers and health-promotion experts.

Results: We identified six key outdoor-intervention elements: 1) physical activity; 2) reconnecting body and mind; 3) nature metaphors; 4) creating relationships; 5) observing natural interactions; and 6) experiential learning. The results further showed that the implementation of these elements may facilitate the rehabilitation process after burnout in which proximal, intermediate, and distal outcomes emerge. Finally, the results suggested that this implementation process depends on the context of the therapist (e.g., number of clients per day), the therapy (e.g., privacy issues), and the clients (e.g., affinity to nature).

Conclusion: The intervention and evaluation model for outdoor therapy shows how key outdoor intervention elements may contribute to the rehabilitation process after burnout. However, our model needs to be further tested among a larger group of clients to empirically evaluate whether and how outdoor therapy can support rehabilitation.

Introduction

Employee Burnout and Rehabilitation Programs

Burnout is defined as "a work-related state of exhaustion that occurs among employees, which is characterized by extreme tiredness, reduced ability to regulate cognitive and emotional processes, and mental distancing. These four core dimensions are accompanied by depressed mood as well as by non-specific psychological and psychosomatic distress symptoms" (Schaufel and Desart, 2020, p.28). Being burned out reflects a process of not being able to work due to chronic exhaustion and impaired cognitive functioning (i.e., I cannot do my job anymore) and a process in which employees mentally or even physically distance themselves from their jobs to prevent further depletion (i.e., I do not want to do my job anymore) (Schaufeli and Desart, 2020). Over time, burnout adversely affects both employee health and well-being, such as an increased risk for cardiovascular diseases (Appels and Schouten, 1991), as well as affecting organizational performance, including decreased levels of job satisfaction and increased absenteeism (Alarcon and Edwards, 2011; Ruitenburg et al., 2012; Salvagioni et al., 2017). In the Netherlands, burnout is the most significant predictor of high sick leave and replacement costs, estimated to be 3.1 billion euros annually (TNO, 2020).

The so-called Dutch "rehabilitation guidelines" emphasize facilitating the return to work (RTW) process through reducing burnout complaints, using cognitive-behavioral therapies (CBT) and psycho-education, combined, if possible, with intervening in the working context (van Dam et al., 2017; Van Dam, 2021). However, evaluations of the effectiveness of such burnout-rehabilitation interventions reveal suboptimal results in terms of both reducing burnout complaints and facilitating the RTW process (Ahola et al., 2017; Awa et al., 2010; Perski et al., 2017; Pijpker et al., 2020); for example, Blonk et al. (2006) showed that combining both CBT and a reduced workload only facilitated a partial RTW but did not fully alleviate burnout complaints. This is in line with the findings from de Vente et al. (2015), who showed that recovering from burnout complaints and the RTW are two relatively independent processes, which both remain poorly understood. As Demerouti et al. (2021) recently synthesized, theoretically grounded and evidence-based best-practice rehabilitation interventions are simply lacking in burnout literature. The evidence base surrounding existing burnout-rehabilitation interventions is thus weak (Pijpker et al., 2020; Schaufeli, 2020), as acknowledged in the rehabilitation guidelines currently applied in the Netherlands (Van Dam et al., 2017).

Outdoor Therapy Interventions for Employee Burnout

While the effects of existing burnout-rehabilitation programs are suboptimal, evidence supporting the positive effects of nature on our health and well-being is accumulating (Hartig et al., 2014). Nature exposure has a range of positive physiological effects, such

as reducing the levels of salivary cortisol and blood pressure (Twohig-Bennett and Jones, 2018); beneficial psychological effects, including increased self-esteem and an improved ability to concentrate (Bratman et al., 2012); and overall improved health and well-being (White et al., 2019). Besides the effects of nature exposure, undertaking activities in nature such as walking or gardening reduces stress-related complaints and enhances overall health and well-being (Annerstedt and Währborg, 2011; Sahlin et al., 2014).

Besides the positive effects of nature exposure on our general health and well-being, nature exposure also supports recovery from acute and chronic stress. For example, a recent meta-analysis showed that exposure to natural environments leads to significantly more stress reduction, using both objective (e.g., salivary cortisol) and subjective (e.g., self-reported stress) measures, compared to built environments (Yao et al., 2021). Concerning nature exposure in relation to recovery from burnout complaints, Cordoza et al. (2018) showed that taking daily work breaks among nurses in a garden compared to indoor-only breaks resulted in significantly fewer burnout complaints.

Based on the health-promoting and restorative effects of nature, taking clients outdoors into nature is increasingly being used as a complementary approach to traditional therapies for various client and patient groups (see Annerstedt and Währborg, 2011; Sahlin et al., 2014; Sahlin et al., 2015), generally called 'outdoor therapy' (Cooley et al., 2020). In the present study, we define outdoor therapy as the combination of providing psychological support used in traditional therapies and specific outdoor elements with the aim of supporting the rehabilitation process after burnout, facilitated by a licensed practitioner (Annerstedt and Währborg, 2011; Cooley et al., 2020). For employee burnout, psychological support used in traditional therapy for burnout entails CBT and psychoeducation (Van Dam et al., 2017).

Scientific Lacuna and Study Aim

Although evidence for the effectiveness of outdoor therapies in tackling employee burnout is emerging (Sahlin et al., 2014; Stigsdotter and Grahn, 2003; Stigsdotter et al., 2018; van den Berg and Beute, 2021), theories or models explaining how they can facilitate the rehabilitation process after burnout are often lacking (Annerstedt and Währborg, 2011). Recently, in their systematic literature review focusing both on outdoor therapists and client experiences, Cooley et al. (2020) developed a best practice framework for key considerations for taking therapy outdoors in general. This framework shows various therapy approaches and natural environments used in the outdoors, as well as potential practical, therapeutical, and organizational issues and solutions when bringing conventional therapy outdoors (Cooley et al., 2020). Outdoor therapies are considered 'complex interventions', however, meaning that the implementation of various intervention elements depends on the specific context in which the intervention takes place (Annerstedt and Währborg, 2011, p. 384).

In order to understand how outdoor therapies work for employee burnout, it is first

important to describe how intervention elements in combination with the underlying intervention context may facilitate rehabilitation after burnout. To our knowledge, no attempts have been made to unravel how key elements of outdoor therapy in combination with the underlying intervention context may facilitate the rehabilitation process after burnout. Therefore, this study aims to develop an intervention and evaluation model for outdoor therapy that helps understand whether and how such outdoor interventions may work for rehabilitation after burnout. It is important to note that we are not conducting an effect and process evaluation of outdoor therapy for employee burnout. Rather, this explorative study will empirically develop how such an outdoor intervention may work for employee burnout, without testing or confirming the assumptions among a large representative group of clients.

Methods

We build on the exemplary case of an outdoor intervention for rehabilitation after burnout developed by two outdoor clinical psychologists in the Netherlands (in Dutch: "De Buitenpsychologen"[1]). They developed and implemented a training program for clinical psychologists who want to bring their therapy outdoors to treat employee burnout and other psychological disorders and thereby become a licensed outdoor therapist. As outdoor therapy is not an accepted therapy intervention in mainstream mental-healthcare settings, almost all outdoor therapists are self-employed; however, these practitioners are allowed to diagnose employees with burnout or other psychological disorders. This means that Dutch healthcare insurers can financially cover outdoor therapy for their clients.

To develop the intervention and evaluation model of outdoor therapy, we build on the generic context, process, and outcome (CPO) evaluation model (Fridrich et al., 2015) and the generic burnout recovery model (BRM) (Pijpker et al., 2021; Van Dam, 2021) as an overarching frame. Based on this deductively derived generic frame, we then inductively specified the intervention and evaluation model of our exemplary outdoor therapy case in the Netherlands, using both primary and secondary data. Before describing the data collection and analysis procedures, we will first introduce the CPO and BRM models.

The Generic CPO Evaluation Model Applied to Outdoor Therapy for Employee Burnout

The generic CPO evaluation model is increasingly being used to explore how the implementation of an intervention in a certain context can facilitate change processes among participants, after which certain proximal, intermediate, and distal outcomes

1 https://www.debuitenpsychologen.nl/

emerge (Fridrich et al., 2015). Using our exemplary case in the Netherlands, we aimed to unravel how the implementation of therapy outdoors may facilitate the rehabilitation process after burnout. We also aimed to identify indicators to empirically evaluate whether and how the intervention works. *Context* can be divided into an omnibus context, which refers to the general and implementation setting, and a discrete context, which refers to situationally specific variables (Fridrich et al., 2015). With regards to outdoor therapy in the Netherlands, the omnibus context refers to the location of the therapy or the season in which it takes place. The discrete context refers to aspects directly relevant to the implementation process of key outdoor intervention elements; for example, clients can be in different phases of the rehabilitation process (Pijpker et al., 2021; Van Dam, 2021), which may require that outdoor elements are adapted to achieve therapeutic goals in a certain rehabilitation phase.

Concerning the *change process*, two subcategories can be distinguished (Fridrich et al., 2015): 1) the implementation process of key (outdoor) intervention elements and 2) how the implementation of intervention elements facilitates the rehabilitation process after burnout. This change process inevitably results in proximal, intermediate, and distal *outcomes* (Fridrich et al., 2015), such as increasing clients' feeling of control over their rehabilitation (Pijpker et al., 2021; Van Dam, 2021). Finally, the model distinguishes three different phases: the preparation phase (preparing the intervention), the action-cycle phase (conducting the intervention), and the appropriation phase (after the intervention) (Fridrich et al., 2015). In our study, the emphasis was placed on the preparation and action-cycle phases to unravel the interplay between the context, processes, and outcomes of outdoor therapy for employee burnout.

The BRM

To understand how outdoor therapy may facilitate the rehabilitation process after burnout among employees, we will use the generic BRM (Pijpker et al., 2021; Van Dam, 2021). This model is based on the theory of salutogenesis, originally proposed by Antonovsky (1979, 1987). Salutogenesis aims to explain the factors affecting health and well-being in the everyday life context and complements the pathogenic approach, which focuses on factors causing disease and infirmity (Mittelmark and Bauer, 2017). The central concept of salutogenesis is the sense of coherence (SOC), which reflects the extent to which people experience life as comprehensible, manageable, and meaningful (Eriksson, 2017).

People with a strong SOC feel confident in using internal and external resources, enabling them to successfully cope with stressors, such as daily hassles or significant life events. In the present study, burnout is defined as a life event stressor, as it is characterized by feelings of losing control over one's working situation and resources (Bernier, 1998; Fjellman-Wiklund et al., 2010; Pijpker et al., 2021; Salminen et al., 2015). Resources that enable successful coping with stressors are called generalized resistance resources (GRRs), which can be internal, such as high levels of self-esteem, and external, such as

having good social relationships with one's colleagues (Idan et al., 2017).

Recently, Pijpker et al. (2021) applied the theory of salutogenesis to explore the processes underlying a successful recovery after burnout. The BRM was developed based on multiple in-depth interviews with burned-out employees, focusing on their overall recovery experiences within and beyond the therapeutic context of outdoor therapy. The model consists of four generic recovery phases: 1) facing the crisis; 2) addressing root resources and stressors; 3) seizing and realizing the opportunity; and 4) staying in work. These phases represent a variety of GRRs (see Table 7.1). Additionally, social support (e.g., from family, colleagues, therapist) and regaining a feeling of control are two overarching GRRs facilitating the rehabilitation process. With regards to the CPO evaluation model, the four rehabilitation phases reflect the change process (Pijpker et al., 2021; Van Dam, 2021), facilitated by the implementation of key outdoor intervention elements in the underlying context.

Table 7.1. Burnout recovery model including key treatment goals and generalized resistance resources (Based on: Pijpker et al., 2021; Van Dam, 2021).

Recovery phase	Generalized Resistance Resources
Facing the crisis	- Accepting the problem
	- Resting
Treatment goal: enabling clients to accept the situation	- Reducing stressors in work / private life
and that change is required	- Financial support from social security system*
	- Psychological support
Addressing root stressors and applying resources	- Relaxing exercises
	- Mindfulness exercises
Treatment goal: reducing clients' (physiological) stress	- Daily structure
levels and restoring the connection between body and	- Physical activity
mind	- Experiencing nature
	- Feeling physically and mentally well
Seizing and realizing the opportunity	- New coping strategies
	- Reflecting on key stressors and resources
Treatment goal: empowering clients to apply new skills	- Social support
and coping strategies to make change happen	- Connectedness with the working context
	- Approving one's feelings
	- Courage
Staying at work	- Confidence in the future
	- Awareness of potential pitfalls
Treatment goal: strengthening clients' capacities to	- Meaningfulness in work / private life
maintain a sustainable and meaningful working life.	

Note. *In the Netherlands, social security systems like healthcare insurance cover treatment for people on sick leave who suffer from burnout. Also, employers are responsible for paying wages during the first two years of sick leave (Schaufeli, 2017).

The Collection of Related Primary and Secondary Data

Both primary data sources (i.e., interviews with former clients, outdoor therapists, intervention developers, and experts) and secondary data sources (i.e., the existing intervention protocol) were used to specify the intervention and evaluation model of outdoor therapy. Participants were selected by means of purposive sampling (De Vaus, 2001), which was used to ensure that the outdoor therapists all had the same training and expertise related to this therapy and that clients had fully participated in the outdoor intervention and successfully recovered from burnout.

We employed online semi-structured interviews with outdoor therapists (N = 4; 4 females; age range, 32-51) to understand their practice and experiences with outdoor therapy. The questions focused on how the combination between general psychological support and specific outdoor elements may work for employee burnout. More specifically, we asked for the key outdoor intervention elements they applied and for practical examples of implementing these key elements. During the interview, the BRM was used to discuss how the key intervention elements can trigger change processes and outcomes in each burnout recovery phase. Interviews with former clients (N = 4; 2 males, 2 females; age range, 24-46) were conducted to enrich our insight into how outdoor therapy fits with the four recovery phases of the BRM (Pijpker et al., 2021; Van Dam, 2021). Burnout was diagnosed as being on sick leave or not being able to perform work-related tasks for at least six months due to work-related stressors and ruling out any other psychological disorders (Van Dam et al., 2017). The interviews started with an open question about the experiences of participating in outdoor therapy, after which the BRM was used to understand the experiences of their rehabilitation as a result of receiving outdoor therapy.

Besides interviews with therapists and clients, we used the intervention protocol of outdoor therapy for employee burnout as secondary data to identify key intervention elements and their implementation processes. Finally, we held online reflective meetings with experts in the field of health promotion (N = 6, two sessions total) and the Dutch developers of outdoor therapy (N = 2, five meetings total). The overarching aim of these reflective meetings was to explore and clarify the overall development of the intervention and evaluation model of outdoor therapy, thereby creating multiple feedback loops for specifying the final model.

Data Analysis

All interviews were transcribed verbatim. The key points of the reflective dialogues were summarized from the recordings. The analysis entailed an iterative process of inductively identifying key outdoor intervention elements, how the implementation of these elements may facilitate the rehabilitation process, and which outcomes may emerge. Besides describing the context, change processes, and outcomes of outdoor therapy, we also focused on identifying the contextual factors related to the implementation of the key outdoor intervention elements.

The transcripts and the intervention protocol were read several times to enhance familiarity with the data (Corbin and Strauss, 1990). Using ATLAS.ti (version 9.0), the data were then open-coded line-by-line with no rules about what should be labelled and how; for example, labels could be descriptive or conceptual. Following the open-coding of all materials, the codes were connected, linked, and grouped into themes (axial coding), after which the first author allocated themes to key outdoor intervention elements, the four rehabilitation phases, outcomes, and implementation-related indicators of the key outdoor elements (selective coding). This analysis procedure was repeatedly discussed with all authors, and the findings were reflected upon by the intervention developers to enrich the results. By doing so, we used the generic principles of thematic analysis (Braun and Clarke, 2006), which was deemed appropriate to inductively identify the aspects within the generic deductively derived CPO and BRM frame. Notes and audio recordings from the reflective meetings were used to further support the selective coding process (for example, distinguishing proximal and intermediate outcomes). This process was repeated until data saturation was achieved.

Ethical Considerations

The methodology for this study was approved by the Social Sciences Ethics Committee (Wageningen University & Research) on June 13, 2019. Prior to the interviews, the first author emailed the participants to inform them about the aims of the study. The researchers were aware that interviews with former clients involved a potential risk of traumatization by asking people to revisit what they had experienced before. The participants were informed about this possibility and were told that they could contact the interviewer and occupational doctor at any time after the interview. All participants provided signed informed consent before the interviews took place. Since all interviews took place online due to the COVID-19 restrictions, they again provided consent before starting the interview.

Results

The Intervention and Evaluation Model for the Outdoor Therapy of Employee Burnout

Figure 7.1 shows the intervention and evaluation model for outdoor therapy as an overarching outcome of our data analysis. The model presents how the implementation of key outdoor intervention elements may facilitate the rehabilitation process after burnout. This implementation process strongly depends on the discrete context of the: 1) therapist, 2) client, and 3) therapy. We first describe the results related to the implementation of key outdoor intervention elements, as well as how these elements may facilitate the rehabilitation process and outcomes. Finally, we present our findings

concerning the role of the discrete context in implementing the key outdoor intervention elements, as well as the context-related indicators of these elements.

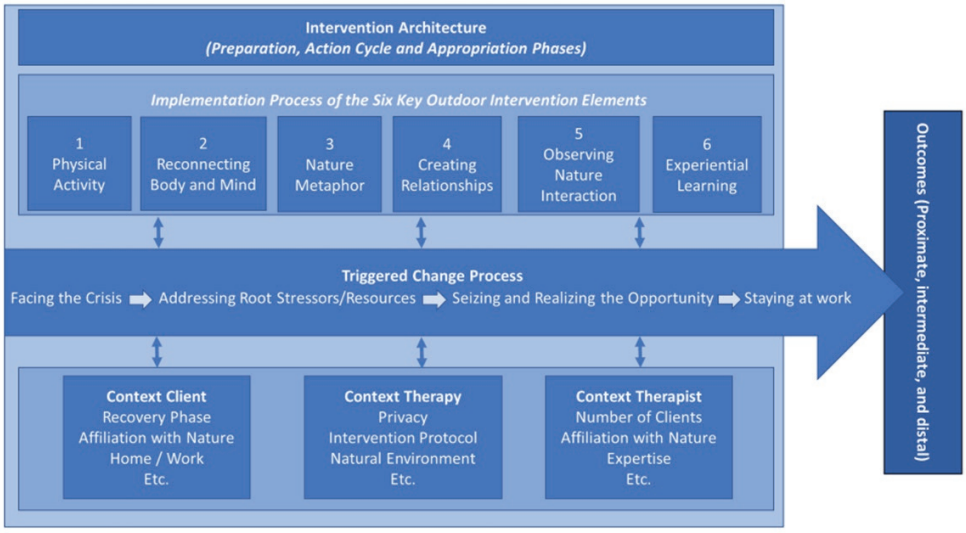

Figure 7.1. Intervention and evaluation model of outdoor therapy for employee burnout.

Key Outdoor Intervention Elements

The analysis showed that outdoor therapy involves a maximum of 12 sessions per client per year. The preparation phase (sessions 1–3) covers the intake, including exploring therapeutic goals and discussing mutual expectations from both the client and the therapist (IP6:64[2]). The action-cycle phase (sessions 4–8) facilitates the rehabilitation process (IP6:65). The sessions in the appropriation phase (sessions 9–12) serve as a backup in case a client drops out of work again, which might indicate more complex psychological problems than burnout (IP6:66).

The analysis showed that the standard CBT and psychoeducational approaches are combined with six key outdoor intervention elements. These intervention elements are: 1) physical activity, 2) reconnecting body and mind, 3) nature metaphors, 4) creating relationships, 5) observing natural interactions, and 6) experiential learning. The analysis further showed that the selection and implementation of intervention elements are not predefined to belong to a certain therapy session or GRR in the rehabilitation phases. Rather, they can be applied in any session to facilitate change in single or multiple GRRs in single or multiple rehabilitation phases. We now describe the implementation of the six key outdoor intervention elements and how, in our analysis, they were found to facilitate the rehabilitation process after burnout.

2 IP, intervention protocol; CL, client; OT, outdoor therapist; ID, intervention developers. The numbers refer to the document and quotation number.

The Implementation and Rehabilitation Process

The first key outdoor intervention element is ***physical activity***, meaning that therapists walk with clients in the outdoors. By doing so, therapists aim to improve the client's physical health and mental well-being, which are GRRs in the second rehabilitation phase. They also encourage clients to walk outside every day for half an hour or one hour, thereby using physical activity to create a daily structure and prompting the client to make a change in their rehabilitation. Daily structure is a GRR in the second rehabilitation phase, and activating the client relates to the overarching GRR in the rehabilitation process: regaining a feeling of control. To achieve this, therapists give homework exercises to clients containing daily outdoor walks and also reflect on their experiences of walking daily, sometimes by means of psychoeducation to clarify what clients are feeling. Therapists observe that by going outdoors and being physically active, clients experience the success of having achieved something that day and feel at ease, which also relates to the GRR of regaining a feeling of control over the rehabilitation process.

> *"[Clients report] 'I actually went outside today and I did go for a walk, which I can check off my to-do list.' … 'Nice that I have done this today' … That makes them relaxed." (ID5:34)*

Therapists also observe that clients share their stories more easily while walking, as being physically active stimulates the creative part of their brain, which results in 'deeper' conversations (ID5:16). Therapists then use CBT and psychoeducation to clarify the client's emotions, feelings, beliefs, and thoughts, thereby addressing both the second and third rehabilitation phases (e.g., GRR: approval of one's feelings). This observation was also reflected by clients.

> *"I think because of walking, my brain, thoughts, body are 'turned on', so it is easier to change thoughts and beliefs and share things." (CL2:18)*

Besides the direct effects of being physically active, all therapists shared that observing how clients walk is an opportunity to observe their body language. Most clients tend to walk or 'race' during the therapy sessions. This is often directly used in the therapy sessions through psychoeducation and CBT; for example, by reflecting on the clients' walking pace. By literally slowing the client down, the therapists observe clients feel more relaxed and aware of their feelings, which is a GRR in the second rehabilitation phase.

> *"Walking too fast is actually a beautiful metaphor. I ask clients if they also walk two meters in front of their colleagues at work or other people. Then I try to talk to them,*

and I notice that they are not able to talk with me normally and are out of breath. Again, I ask them if they are in front of everyone even when out of breath.. What would happen if you walked one gear slower?" (OT2:15)

Although all therapists and most clients reported the beneficial effects of physical activity on the rehabilitation process, one client reported that walking, especially in the first couple of sessions, was more of a burden than helping him (CL1:17).

The second key outdoor intervention element is ***reconnecting body and mind***, meaning that the direct effects of just being in nature are combined with sensory or mindfulness exercises. Therapists reported often seeing burnout clients lost in their own thoughts. Before using CBT or psychoeducation, therapists emphasize that it is important to slow down, restore the connection with how they feel in the present moment, and let go of previous thoughts (IP:20). Just being in nature was reported to slow clients down and restore their connection with how they feel in the present moment without any additional therapy work. This relates to the first rehabilitation phase (e.g., GRR: resting). When they apply sensory or mindfulness exercises in nature, they notice that clients are able to let go of previous thoughts, feelings, and emotions, which relates to the third rehabilitation phase (e.g., GRR: approval). Being outdoors, therefore, enables clients to become a 'mindful owner' of their thoughts and lets them experience what being in the present moment can mean for their health and well-being (IP:6). By doing so, clients enhance their GRR, regaining a feeling of control over their rehabilitation.

"I slow down the walking pace on purpose and tell clients to be silent and to focus on what they see, smell, hear, feel, and taste for 10 minutes. Their attention shifts from their minds to the present moment." (OT3:20)

Therapists shared that they can directly observe when a client is in the present moment; clients breathe more deeply, sweat less, and have less tense shoulders when being present in nature. If deemed appropriate, the therapists use psychoeducation to clarify to the client what their feelings mean, enabling the clients to approve their feelings and emotions (i.e., GRR in the third rehabilitation phase). Although most clients shared the therapists' observations, one client commented that it takes time to learn and experience what reconnecting the body and mind can bring to their rehabilitation, which relates to the second and third rehabilitation phases.

"I had the feeling that the therapist thought my mind and body should calm down first. … But why would I do these breathing exercises? That was really weird in the beginning. All right, I thought, let's do it anyway. But that was not what I expected from a therapist. … Far later, I realized and experienced that my incorrect breathing

turned out to be an important part of the puzzle to alleviate stress." (CL1:33)

The third key outdoor intervention element is ***nature metaphors***, meaning that natural environments are used as a mirror for reflection to achieve certain therapeutic goals in the rehabilitation process. Reflection is a GRR in the third rehabilitation phase. Nature metaphors were reported by therapists to be very useful in order to sustain and visualize verbal communication, enabling clients to better understand or express feelings, thoughts, behavior, desired goals or changes, or the concepts used in CBT or psychoeducation. Clients emphasized that nature metaphors helped them to express how they feel in the present moment compared to the past, but also what they would like to achieve in the rehabilitation process. This relates to the overarching GRR of regaining a feeling of control over the rehabilitation process.

"You ask the client to point to something in nature that matches their story or feeling. You can also use the weather or natural elements to clarify abstract theoretical concepts in CBT or psychoeducation; for example, burned-out clients find it very logical that a tree requires food, light, protection, and other vital resources, but forget they need those as well." (OT3:24)

"I remember I had to express how I feel by standing between two trees on a scale from one to ten, and where I would like to be next time. … We did the same by taking pictures of bushes to express how I felt and which bush I would like to be." (CL4:10)

The fourth key outdoor intervention is ***creating relationships***, meaning that the outdoors facilitates the development of the relationship between the client and their therapist in several ways. Most clients and therapists reported their relationship to be strong because walking or sitting next to each other supports a natural flow in the conversation, allowing silence without putting the pressure on the client to answer immediately (ID5:22). Additionally, nature is experienced as something 'shared', making both the client and therapist aware of being part of something bigger; the clients think of themselves less as 'the client', and the therapist feels less of 'the professional'. Most clients contend that their therapist is 'walking with them in the conversation', meaning they do not merely talk based on a model but really listen and give tailored advice about what clients can do or how they can look at things differently. This relates to all four rehabilitation phases but in particular the two overarching GRRs: regaining feelings of control over the rehabilitation process and experiencing social support.

"Talking next to each other outdoors is less confronting. I felt like I had so much 'space' to tell my story. … She literally gave me the space, which made me feel so relaxed. … These were very inspiring talks, which I did not expect. I thought she

would tell me what to do, like create a structure etc. … but not at all. We talked about essential things for my recovery process, about meaningfulness in life beyond work; it was a very deep conversation. … No 'do this, do that' kind of bullshit, which anyone can find in books about burnout or at any general practitioner." (CL3:9)

One outdoor psychologist and one client reported diverging perspectives. The therapist shared that one of her previous clients was not always able to make eye contact while walking (OT1:21). The client emphasized that the relationship with the therapist was indeed mutual but did not attribute any influence of nature on their relationship (CL1:64).

"I had one client who experienced not looking at each other as terrible, as she wanted a lot of confirmation regarding my thoughts about what she said … I solved it by sitting on a bench with her, 1.5 meters apart due to the COVID-19 measures."

"…I was like a turtle lying on my back and needed professional help. I was very skeptical about the idea of outdoor therapy. I really had a perfect connection with my therapist, but being outdoors did not contribute to that relationship at all."

The fifth key outdoor intervention element is ***observing nature interaction***, meaning that the way in which the client interacts with the natural environment informs the therapist in various ways; for example, therapists can observe body language to assess whether someone is in the present moment by observing if clients notice what is happening around them. By doing so, therapists can reflect with the clients on their feelings, behaviors, and thinking using CBT or psychoeducational approaches (IP6:48), which relate to various GRRs in all rehabilitation phases. However, therapists cannot always intentionally plan on observing nature interaction, as clients are sometimes suddenly triggered by what they see or what is happening in nature.

"Then we arrived at a path with a fly agaric with no other things around it. … She became very emotional suddenly and started crying very hard, while I was thinking how on Earth can I access her feelings. The client explained that she was very lonely and that rather than seeing a beautiful fly agaric, the mushroom was representing her feelings." (OT1:27)

The sixth key outdoor intervention element is ***experiential learning***, meaning that natural elements are used to achieve certain therapeutic goals in the rehabilitation process; for example, trees or bushes are used to help clients to experience and learn to set limits, position themselves in relation to colleagues or social networks, or worry less. By doing so, clients experience what it could take to achieve their desired changes and

how coping strategies such as setting limits at work can help them to remain at work. By doing so, the GRRs in the third and fourth rehabilitation phases are addressed (e.g., the GRR of courage to make changes at work).

> *"The focus on returning to work can be internalized by the 'past-present-future' exercise in nature. The client has to select three trees that reflect where he or she is coming from, currently is, and where the desired outcome is. By physically standing still at the three situations, the client experiences and learns about the past, present, and future." (IP6:42)*

The Role of the Discrete Context

Our analysis showed that the implementation of key outdoor intervention elements, and hence the change processes, strongly depends on the discrete context. We identified three different discrete contexts, namely the context of the client, of the therapist, and of the therapy.

Concerning the *context of the client*, most clients had an affiliation with or preference for receiving therapy outdoors, mainly because they like walking or had negative experiences with traditional indoor therapies. Clients also differed in their rehabilitation phases. For some clients, learning to deal with the working environment was key in the rehabilitation process, whereas for other clients, changes in their private life were experienced as key factors.

> *"Based on previous experiences with indoor psychologists and the general practitioner, my expectations were not that high to be honest. I thought all these conversations would probably not help me, so I just brought my dog to the outdoor therapy sessions. If I indeed hadn't found it helpful, I at least went for a nice walk with the dog, which was a major reason for joining outdoor therapy... I was really surprised it all worked out so well as they took my previous experiences seriously... They really listened to my story and did not just tell me what to do from a theoretical model." (CL3:6)*

With regards to the *context of the therapist*, several therapists said that they are often self-employed, meaning that they have a lot of autonomy compared with those using highly standardized protocols and administration processes in indoor mental healthcare settings. They also reported different preferences for specific types of the natural environment and natural exercises, which directly influences how intervention elements are implemented. Finally, all shared a strong affiliation for being outdoors and made the 'step outside' for their own health and well-being first, as they were experiencing high amounts of stress working indoors.

"I see working outdoors as playing outdoors to be honest. There is a completely different 'loading', which makes it all less heavy than working indoors." (OT4:15)

Finally, the *context of the therapy* itself relates to aspects of opportunities in the outdoor environment and the types of natural places used; for example, living in a metropolitan area offers fewer chances to go to a large remote forest. Other characteristics relate to how to work within COVID-19 measures and rules around ensuring privacy. Finally, the intervention protocol was argued to be used as a decision tool and not as a one-size-fits-all approach.

"I think you can talk about a decision tree, rather than an intervention protocol... You first have to really listen to the client and then choose different exercises, which will facilitate a certain therapeutic goal...It is always about tailoring the needs of the client to the possibilities within the natural environment and the capacities of the therapist." (ID5:37)

Table 7.2 shows the context indicators of the client, therapy, and therapist, which were identified based on the analysis of the intervention protocol, and interviews with clients and therapists. All these factors in the discrete context influence how the key outdoor intervention elements are implemented.

Table 7.1. Burnout recovery model including key treatment goals and generalized resistance resources (Based on: Pijpker et al., 2021; Van Dam, 2021).

Client	Therapy	Therapist
Home resources/demands	Influence of nature on achieving therapeutic goals	Affinity with nature
Work resources/demands	Satisfaction with the therapy	Number of clients per day
Rehabilitation phase	Satisfaction with the therapist	Experience with outdoor therapy
Affinity with nature	Type of natural environment used	
Previous experiences with therapy	Use of intervention protocol	
Participation in other rehabilitation programs	Number of therapy sessions	
Changes observed by significant others	Duration of therapy sessions	
Social support from the employer		
Social support from the occupational doctor		

Outcomes

Table 7.3 presents the proximal, intermediate, and distal outcomes as a result of the implementation of the six intervention elements and triggered change process, based on our analysis of the experiences from therapists, clients, and intervention initiators. *Proximal outcomes* are becoming a mindful owner of one's thoughts, becoming physically active, feeling relaxed, and experiencing success. *Intermediate outcomes* are regaining a feeling of control over the rehabilitation process, applying new proactive coping strategies, feeling meaningfulness in (working) life, feeling confident for the future, understanding the potential pitfalls of burnout, feeling mentally well, and a partial RTW. *Distal outcomes* are outcomes not emerging during the intervention itself, including a full RTW, reducing burnout complaints, and experiencing walking in nature as an everyday resource for one's health and well-being.

Discussion

The present study aimed to develop an intervention and evaluation model of outdoor therapy to enhance our understanding of how outdoor therapies may facilitate the rehabilitation process after burnout, as well as to explore how to empirically evaluate such an outdoor intervention.

Table 7.3. Key outcomes triggered by the implementation of the six intervention elements and change process.

Proximate Outcomes	**Intermediate Outcomes**	**Distal Outcomes**
Becoming a mindful owner of one's thoughts	Regaining a feeling of control over the rehabilitation process	Experiencing walking in nature as an everyday resource
Becoming physically active	Utilizing social support from employers and employees	Feeling no burnout complaints
Experiencing success	Applying new (pro-active) coping strategies	Full return to work
Feeling relaxed	Feeling meaningfulness in (working) life	
	Feeling confident about the future	
	Understanding potential pitfalls	
	Feeling mentally well	
	A partial return to work	

We used the generic CPO model (Fridrich et al., 2015) and the generic BRM (Fridrich et al., 2015; Pijpker et al., 2021; Van Dam, 2021) as an overarching deductive frame. We then inductively identified key outdoor intervention elements and examined how the implementation of these elements may enhance GRRs in various rehabilitation processes and the resulting outcomes. We showed that outdoor therapy comprises six

key outdoor intervention elements: 1) physical activity, 2) reconnecting body and mind, 3) nature metaphors, 4) creating relationships, 5) observing natural interactions, and 6) experiential learning. We also showed that the implementation of these elements strongly depends on the context of the client (e.g., rehabilitation phase), therapy (e.g., privacy issues), and therapist (e.g., number of clients per day), meaning that elements cannot be predetermined to belong to rehabilitation phases and outcomes. Finally, we identified various indicators of these contextual factors, which may facilitate the evaluation of outdoor therapy.

Scientific Implications

To our knowledge, this is the first time an intervention and evaluation model of outdoor therapy for rehabilitation after burnout has been empirically developed. Although previous observational and experimental studies have focused on the efficacy of various outdoor burnout therapy interventions (Annerstedt and Währborg, 2011; Sahlin et al., 2014; Sahlin et al., 2015), none of them aimed to unravel the 'black box' of how such outdoor interventions may work. The present study complements the existing bank of knowledge by inductively investigating how the implementation of key outdoor intervention elements—in combination with the context of the client, therapy, and therapist—may facilitate rehabilitation after burnout.

Previous studies primarily focused on measuring burnout complaints and RTW when conducting effect evaluations (Annerstedt and Währborg, 2011; Stigsdotter et al., 2018); however, these are distal outcomes, requiring months to observe changes (de Vente et al., 2015; Kant et al., 2004; Pijpker et al., 2020; Roelen et al., 2015). We identified a range of proximal and intermediate outcomes that may emerge during and after the therapy sessions. Future studies are therefore encouraged to measure a combination of proximal (e.g., feeling mindful), intermediate (e.g., coping strategies), and distal (e.g., RTW) outcomes. Since the generic BRM is based on the salutogenic model of health (Pijpker et al., 2021), we were able to show how the key outdoor intervention elements may enhance certain GRRs in various rehabilitation phases. Our conceptual and empirical work suggests that outdoor therapy may enhance clients' feelings of control over their rehabilitation (i.e., an overarching GRR in the BRM), which may, in turn, strengthen their SOC in the long term. Related to this, the social support clients experienced in our study may be another GRR enhancing SOC levels, as earlier studies have shown that SOC and social support strengthen each other, especially during negative life events (Srensen et al., 2011). Von Lindern et al. (2017) suggest nature can restore temporarily depleted physical and mental resources, potentially even temporarily depleted SOC levels (von Lindern et al., 2017); thus, it would be worthwhile to explore whether nature becomes an everyday GRR for clients after their therapy sessions have ended, as our study suggests.

Our study shows that the therapist-client relationship is an important prerequisite

for the overall therapy experience. This complements other studies that concluded that relationship factors (e.g., empathy) show a consistent and moderate impact on CBT interventions (Keijsers et al., 2000). Our results suggest that outdoor therapy may facilitate more stronger relationships between clients and their therapists than indoor therapy, which can be attributed to walking side-by-side in the familiar outdoor environment and the natural flow of conversations outdoors. Earlier studies confirm our observation that outdoor therapy may indeed enhance the relationship between clients and their therapists (Cooley et al., 2020). The present study also partly aligns with the recent meta-synthesis of various outdoor therapies by Cooley et al. (2020); for example, nature metaphors and observing how the client interacts with natural elements were identified as key aspects of outdoor therapies in general in their analysis. We complement their findings by showing how the implementation of key outdoor intervention elements can be linked to the recovery process of a specific group of clients (in this case, burned-out employees).

We also showed that physical activity and experiential learning are essential elements of outdoor therapy for employee burnout, which makes sense as it is known that being physically active outdoors alleviates stress (Hartig et al., 2014) and that rehabilitation entails a process of 'learning by experiencing' (Pijpker et al., 2021; Van Dam, 2021). Our observation that physical activity in the outdoors enhances one's capacity to think creatively aligns with earlier experimental studies showing that walking outdoors in nature opens up a free flow of ideas stronger than indoor walking (Plambech & Van Den Bosch, 2015; Oppezzo et al., 2014). Related to this, our study suggests that experiencing nature enables clients to get closer to their inner feelings and think more positive than being in urban or indoor environments; this has been confirmed by several experimental studies showing that spending time in nature reduces people's focus on negative aspects of one's self (Bratman et al., 2015; Bratman et al., 2021). In turn, being able to get close to one's inner feelings, and think creative and positive are important processes in the rehabilitation process after burnout (Pijpker et al., 2021; Van Dam, 2021).

We identified a range of indicators related to the context of the client, therapy, and therapist, thereby enabling the further examination of how these contextual factors may influence rehabilitation after burnout. Our intervention and evaluation model of outdoor therapy can therefore be used to guide context-sensitive evaluation studies, further unravelling the 'black box' of effective elements in outdoor therapy. Although our study explicitly focused on taking clients outdoors into nature as a complementary approach to conventional burnout rehabilitation therapy, the same approach may be feasible to support the recovery process for other psychological disorders like depression or anxiety.

Although our study suggests that outdoor therapy potentially can restore or enhance SOC levels, as well as strengthen work-related GRRs such as learning and applying new coping strategies, the work environment may still be triggering the reoccurrence

of burnout. For example, key work-related stressors such as workload, work pressure, role conflict, and role ambiguity (Alarcon, 2011; Lee & Ashforth, 1996) and GRRs such as job support and social support are not addressed via outdoor therapy as these require more structural interventions in the workplace (Pijpker et al., 2020). Therefore, it is recommended to expand outdoor therapy with interventions in the workplace to reduce stressors and enhance and strengthen GRRs and SOC levels (Pijpker et al., 2018; Pijpker et al., 2021).

Finally, the present study showed how the implementation of the six intervention elements could support the rehabilitation process after burnout, depending on the role of the discrete context, such as the chosen natural environment. However, we were not able to explore the role of different types of natural environments or landscape types in relation to the implementation of intervention elements and the rehabilitation process, which offers an opportunity for future studies. For example, in their pilot study among people with stress-related exhaustion, Sonntag-Öström and colleagues (2010) explored the perceived restorative effects of various forest settings for recovery from stress, showing that forest settings with light were identified as most beneficial (a GRR in the salutogenic model). Besides being exposed to the natural environment, the 'dosage' of time being in nature matters as well; for example, a recent study showed that 120 minutes per week yields the optimum effect for our general health and well-being (White et al., 2019). Therefore, future studies are encouraged to examine which natural environments or landscape types and duration of nature exposure are perceived as most beneficial for rehabilitation after burnout in outdoor therapy.

Study Limitations and Strengths

The present study has multiple limitations and strengths that should be taken into account when interpreting the results. First of all, selection bias was caused by recruiting therapists and clients who all (to a certain extent) believe in the healing effects of nature. This is, however, also a strength, as we explicitly asked what worked for them and how. Nevertheless, we were still able to identify multiple diverging experiences about the role of the outdoors and nature in the therapy and rehabilitation process. A second limitation concerns the very small sample size of clients and therapists, which means that the results should be interpreted with caution regarding their generalizability. However, since we aimed to exploratively and inductively develop an intervention and evaluation model based on a deductively derived generic frame, the triangulation of primary and secondary data sources was deemed appropriate and is generally known as being valid and reliable methods when using case study designs (Yin, 2013). The major strength and aim of this study are that our model can guide future context-sensitive evaluation studies to test our model among a larger group of clients. A third limitation is that all primary data collection was held online due to the COVID-19 measures, which made it impossible to conduct face-to-face interviews; however, online interviews

are not intrinsically less valid or reliable than real-life interviews (Pocock et al., 2021). A fourth limitation is that we did not explicitly compare indoor therapy versus outdoor therapy, making it hard to claim that the intervention elements identified in our study are fully mutually exclusive of those for indoor therapy. Future studies could compare the efficacy of indoor versus outdoor therapies to understand whether and why outdoor therapy is more effective than indoors (or not). Finally, although the combination of our deductive and inductive approaches and the variety of data sources has yielded a rich understanding of our exemplary outdoor therapy for employee burnout, the model also offers a research opportunity to study whether and how the intervention elements may work for other psychological disorders.

Conclusion

The present study aimed to develop an intervention and evaluation model of outdoor therapy for employee burnout. We identified the key outdoor intervention elements (i.e., physical activity; reconnecting body and mind; nature metaphors; creating relationships; observing natural interaction; and experiential learning) and suggest that their successful implementation strongly depends on the discrete context of the client, therapy, and therapist. We identified which GRRs may be strengthened by the implementation of the outdoor intervention, thereby facilitating the rehabilitation process after burnout. Finally, we identified a range of indicators for the process and outcome evaluation of outdoor therapy for employee burnout. Future studies are encouraged to use our intervention and evaluation model as a guide for a context-sensitive evaluation of outdoor therapy for employee burnout and other client and patient groups.

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Chapter 8

An impact and process evaluation of outdoor therapy for employees with burnout

This chapter is submitted as:

Pijpker, R., Bauer, G.F., Veen, E.J., Koelen, M., & Vaandrager, L. An impact and process evaluation of outdoor therapy for employees with burnout. Evaluation and Program Planning.

Abstract

Given the health-promoting effects of nature exposure, outdoor therapy is becoming increasingly popular as a treatment for employee burnout. This study investigates the processes underlying the perceived impact of outdoor therapy (walking and talking in nature) on the burnout recovery process. Using an *a priori* evaluation model (Pijpker et al., 2022), we conducted a quantitative and qualitative examination of the processes and perceived impact of outdoor therapy on various direct and long-term outcomes among six former clients. Data were analyzed for each participant separately, followed by a cross-case analysis focusing on perceptions of the impact and processes of outdoor therapy on the burnout recovery process. The results suggest that three intervention elements—being more active in nature (*physical activity*), using nature to support the client/therapist relationship (*creating relationships*), and having the client interact with nature (*observing nature interactions*)—have promising potential for several direct and long-term outcomes. Other elements—doing mindfulness and meditation exercises in nature (*reconnecting body and mind*), using natural elements for reflection (*nature metaphors*), and using natural elements for specific exercises (*experiential learning*)—may also work for some participants. We reflect on the findings and propose directions for future research.

Introduction

Burnout is "*a work-related state of exhaustion that occurs among employees, which is characterized by extreme tiredness, reduced ability to regulate cognitive and emotional processes, and mental distancing. These four core dimensions of burnout are accompanied by depressed mood as well as by non-specific psychological and psychosomatic distress symptoms*" (Schaufeli et al., 2020, p. 28). The state of being burned out thus reflects a process of being unable to work due to chronic exhaustion and impaired cognitive functioning (i.e., I *cannot* do my job anymore), as well as a process in which employees distance themselves from their jobs mentally, or even physically, to prevent further depletion (i.e., I *do not want* to do my job anymore; Schaufeli et al., 2020). Over time, burnout has adverse effects on employee health and well-being (e.g., increased risk for cardiovascular disease; Appels and Schouten, 1991), in addition to affecting organizational performance (e.g., decreased levels of job satisfaction and increased absenteeism; Alarcon & Edwards, 2011; Ruitenburg et al., 2012; Salvagioni et al., 2017). In the Netherlands, burnout is the most significant predictor of high sick leave usage and replacement costs (TNO, 2021). Burnout develops in response to high job demands, particularly workload, work pressure, role conflict, and role ambiguity (Lee and Ashforth, 1996; Alarcon, 2011), combined with low availability of job resources (e.g., social support and autonomy) for coping with these demands (Xanthopoulou et al., 2007; Lesener et al., 2019). Other contributors to the development of burnout include demands outside of work or personal factors (e.g., low self-esteem; Schaufeli et al., 2020). Despite the existing body of knowledge on the causes and consequences of burnout, few theoretically grounded and evidence-based interventions have been designed and studied, particularly for recovery after dropping out of work (Demerouti et al., 2021; Pijpker et al., 2020). The Dutch rehabilitation guidelines emphasize the use of cognitive-behavioral therapies (CBT) and psychoeducation to facilitate the return to work (RTW) process. If possible, these methods should be combined with intervention in the working context (van Dam et al., 2017; Van Dam, 2021). As revealed by effectiveness evaluations, however, the results of such burnout-rehabilitation interventions have been suboptimal in terms of both reducing burnout complaints and facilitating the RTW process (Pijpker et al., 2020).

Given the health-promoting effects of nature on human health and well-being, various outdoor therapies for employee burnout are emerging. In the present study, outdoor therapy is defined as the combination of providing psychological support and specific outdoor elements to facilitate the recovery process after burnout, with support from a licensed practitioner (Annerstedt and Währborg, 2011; Cooley et al., 2020). "Outdoors" refers to forests, city parks, plants, beaches, and other kinds of outdoor vegetation and natural environments that people generally encounter in everyday life. Some evidence is accumulating with regard to the effectiveness of these interventions

(Annerstedt & Wähborg, 2011; Sahlin et al., 2015; Cooley et al., 2020). For example, according to the results of one explorative pre-test/post-test pilot study, therapy comprising walking and talking in nature reduces the burnout symptoms of employees and improves their self-esteem, life satisfaction, work engagement, concentration, and general physical and mental health (Van den Berg & Beute, 2021). Although evidence on the effectiveness of outdoor therapy is emerging, little is known about the contexts and processes underlying such effectiveness (i.e., what works for whom, how, and why; Annerstedt & Wähborg, 2011). In particular, there is a need for a clear definition and a model that links context, intervention processes, and outcomes.

Based on the general context, processes, and outcome model elaborated by Fridrich and colleagues (2015) we developed an evaluation model to explain whether and how outdoor therapy may facilitate the recovery process after burnout (Pijpker et al., 2022; see Figure 8.1). The model was developed based on interviews with former clients, outdoor therapists, and an outdoor-therapy intervention protocol for employees with burnout. It consists of six outdoor-specific intervention elements (Pijpker et al., 2022). *Physical activity* entails the positive effects of walking outdoors. *Reconnecting body and mind* covers mindfulness exercises aimed at enabling clients to reconnect with their feelings, emotions, and thinking in the present moment. In *nature metaphors*, natural environments are used as mirrors for reflection aimed at achieving certain therapeutic goals in the recovery process. *Creating relationships* involves using the outdoors to support the relationship between clients and their therapists. *Observing nature interaction* involves having clients reflect on their interactions with the natural environment to achieve therapeutic goals. In *experiential learning*, natural elements are used to foster learning experiences in the recovery process. The model further assumes that the effects of the six intervention elements depend on the contexts of the therapist (e.g., number of clients per day), the therapy (e.g., privacy issues), and the client (e.g., affinity with nature). This interplay between context and elements is hypothesized to support the recovery process after burnout, leading to proximate (e.g., feeling relaxed), intermediate (e.g., strengthening coping strategies), and distal (e.g., full RTW) outcomes (Pijpker et al., 2022). Effectiveness studies require first learning more about the interplay between context, outcomes, and elements (Annerstedt and Währborg, 2011; Cooley et al., 2020; Pijpker et al., 2022). To this end, the present study investigates whether and how the implementation of the six intervention elements within the underlying context supports the recovery process after burnout.

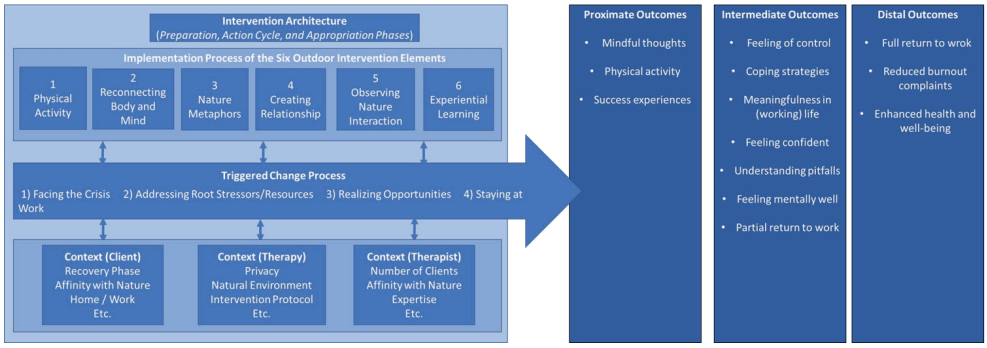

Figure 8.1. Evaluation model of outdoor therapy for employee burnout (Pijpker et al., 2022).

Methods

Study Design

This study is based on a mixed-methods retrospective impact evaluation to examine whether and how the implementation of the six intervention elements within the underlying context supports the recovery process after burnout. Inspired by Randell and colleagues (2005), quantitative and qualitative measurements of the perceived impact of the overall outdoor therapy intervention and its core elements on the recovery process can be used to examine what worked (and what did not work).

Participants

Outdoor therapists were approached by the principal author with the request to ask their former clients to participate in the study. The inclusion criterion was that the former clients should have completed all therapy sessions no later than two years ago, as this assured that memories are still fresh enough to get differentiated answers. Former clients who had completed all therapy sessions but who did not feel completely recovered from burnout were also included in the study. Burnout was diagnosed by the outdoor therapist or another qualified healthcare professional (e.g., occupational health physician) according to five features: 1) persistent and distressing complaints of increased fatigue after mental effort, or persistent and distressing complaints of bodily weakness and exhaustion after minimal effort; 2) at least four of the following additional symptoms—insomnia, cognitive deficits, pain, palpitations, gastroenteric problems, sound sensitivity, and light sensitivity; 3) the complaints and symptoms were present nearly every day for at least two weeks; 4) the complaints and symptoms were due to psychosocial stressors that were present for at least six months before diagnosis; and 5) the complaints and symptoms had led to clinically significant distress or impairment (Schaufeli et al., 2020; Van Dam; 2021).

The six former clients who participated in this study varied in terms of their recovery

process, age, and occupation, but all were highly educated. The age of the six participants ranged from 31 to 57 years. The duration of sick leave usage ranged from 5 to 14 months. The number of outdoor therapy sessions ranged from 8 to 12, each lasting an average of about 60 minutes.

Data Collection

Each participant was asked to complete an online questionnaire to provide a quantitative measurement of the perceived impact of outdoor therapy on the recovery process. Items were developed based on the key dimensions of the evaluation model, including the outcomes, intervention elements, and context (see Figure 8.1; Pijpker et al., 2022):

Proximate, Intermediate, and Distal Outcomes (total 13 items): Sample item: Outdoor therapy made me feel relaxed (measured on a five-point Likert scale, ranging from 1 = totally disagree, suggesting a very low impact to 5 = totally agree, suggesting a very high impact).

Elements (6 items): Sample item: Using nature metaphors supported my burnout recovery process (measured on a five-point Likert scale, ranging from 1 = totally disagree, suggesting a very low impact to 5 = totally agree, suggesting a very high impact).

Context (4 items): Sample item: Private life events supported my burnout recovery process (measured on a five-point Likert scale, ranging from 1 = totally disagree, suggesting a very low impact to 5 = totally agree, suggesting a very high impact).

After completing the questionnaire, all six participants were interviewed using a semi-structured interview guide (see *Supplemental Material*), with a qualitative focus on the general perceived impact of outdoor therapy on the burnout recovery process. Additional questions focused on the perceived impact of the six intervention elements and the perceived impact of the contextual variables in relation to the recovery process. PowerPoint slides containing photos of the intervention elements (see *Supplemental Material*) were used to trigger the experiences of former clients in relation to the elements. The interviews were conducted between December 2021 and March 2022. Due to the COVID-19 pandemic, five participants preferred online interviews. One participant preferred an in-person interview. After obtaining consent, audio recordings were made of the interviews, each of which lasted an average of 55 minutes.

Data Analysis

All of the interviews were transcribed verbatim. For the purposes of this paper, the first author analyzed the original interview transcripts with a deductive focus on the context, elements, and outcomes of the evaluation model (Pijpker et al., 2022). More specifically, the following predefined dimensions were described in detail for each of the participants separately:

- Context: the former client's perceived impact of work and private life on the burnout recovery process

- Elements: the former client's perceived impact of the six intervention elements on the burnout recovery process
- Outcomes: the former client's perceived outcomes of outdoor therapy in general. The former clients also reported whether they would describe themselves as having recovered from burnout.

The quantitative data were also used to indicate how each participant scored the perceived impact of outdoor therapy, its elements, and its context on the burnout recovery process. More precisely, a table was created containing the exact scores obtained by each participant on each of the five-point Likert scales for these key dimensions.

After the case-by-case analysis, the results for the six respondents were compared according to whether and how the implementation of the six intervention elements within the underlying context had supported the recovery process after burnout. First, the similarities and differences concerning the contexts of the former clients were compared, focusing on how the participants had lost control over their (working) lives and why they had opted for outdoor therapy. Accordingly, we compared the pivotal work, and private life events beyond the therapy that had (or had not) contributed to their recovery. Second, focusing on the quantitative findings, we compared the perceived proximate, intermediate, and distal outcomes emerging as a result of the overall outdoor therapy. The qualitative findings were used to identify participants who described themselves as having recovered. Third, we compared similarities and differences between participants concerning whether and how the six intervention elements had contributed to the burnout recovery process. More precisely, based on quantitative findings, intervention elements were grouped into elements that were perceived as having had a very high impact on the burnout recovery process for all participants and elements with mixed (very high, high, low) perceived impact scores on the recovery process. The qualitative findings and relevant quotations were then extracted to determine whether and how each intervention element had supported the burnout recovery process.

Ethical Considerations

The methodology for this study was approved by the Social Sciences Ethics Committee (Wageningen University & Research) on June 13, 2019. We were aware that the interviews involved a potential risk of re-traumatization. The participants were informed about this possibility. The first researcher contacted the participants by telephone or email one week after the interview to ask how they were doing. Each participant provided signed informed consent before the interviews took place.

Results

We begin this section by presenting the qualitative and quantitative (see Table 8.1) findings concerning the *context* of the participants, including causes of burnout, reasons for choosing outdoor therapy, and the impact of work and private life on the burnout recovery process. We then present results from the questionnaire showing the perceived impact of outdoor therapy and the six intervention elements on the proximate, intermediate, and distal *outcomes*. We also present the qualitative findings showing who describe themselves as having recovered from burnout. Finally, we present findings concerning whether and how the six *intervention elements* supported the burnout recovery process. More precisely, we use the quantitative findings to group elements that were perceived as having had a very high impact on the burnout recovery process for all six participants (i.e., physical activity, creating relationships, observing nature interaction), as well as the intervention elements that had mixed impacts on the recovery process (i.e., reconnecting body and mind, nature metaphors, experiential learning). The results of the interviews are then used to examine whether and how each of the intervention elements supported the burnout recovery process.

Context

The interviews indicated that all of the participants had experienced burnout as intense, including being unable to regulate cognitive and emotional functioning, as well as experiencing palpations, various psychosomatic tension complaints, and depressive feelings. All of the participants reported being completely physically and mentally depleted and simply no longer having the energy to do anything. The causes of burnout varied widely among the participants, ranging from always thinking of others first instead of oneself to experiencing excessive workload or perceiving a lack of meaningfulness at work. In general, one experience that the participants had in common was that, regardless of the cause, they were no longer able to relax, such that they were literally burning out all of their mental and physical energy.

According to the quantitative findings (see Table 8.1) and interviews, all of the participants had already had a strong affinity with nature prior to starting outdoor therapy. They reported liking the outdoors, particularly for purposes of walking and engaging in sports. Many of them were nevertheless unaware of outdoor therapy. Reasons for choosing outdoor therapy consisted largely of an interest in doing something active outdoors, after which participants received recommendations from friends, relatives, or their general practitioners to contact an outdoor therapist.

Table 8.1. Results of the quantitative retrospective impact assessment.

Perceived Positive Impact* of	On	Kristy**	Lea	Mathilda	Victoria	Ethan	Laura
Outdoor Therapy	*Overall burnout recovery process*	5	5	5	5	5	5
	Proximate Outcomes						
	Feeling relaxed	5	5	4	4	4	5
	Improving physical well-being	4	4	4	5	4	5
	Coming close to one's own feelings	5	5	4	5	4	5
	Intermediate Outcomes						
	Feeling of control over the recovery process	5	5	4	3	3	5
	Improving mental well-being	5	5	4	3	4	5
	Feeling healthy	5	5	4	3	3	4
	Coping with work-related challenges	5	5	4	4	3	5
	Distal outcomes						
	Enhancing life satisfaction	4	5	5	3	3	4
	Having confidence in the future	5	5	4	4	4	5
	Returning to work	5	5	4	5	3	5
	Visiting nature more often	5	4	4	5	4	5
	Reducing burnout complaints	5	5	5	4	4	5
	Appreciating work	5	4	3	4	3	4
The Six Intervention Elements							
Physical activity	*Overall burnout recovery process*	5	5	5	5	5	5
Creating relationships	*Overall burnout recovery process*	5	5	5	5	5	5
Observing nature interactions	*Overall burnout recovery process*	5	5	5	5	5	5
Reconnecting body and mind	*Overall burnout recovery process*	4	5	5	3	3	4
Nature metaphor	*Overall burnout recovery process*	5	5	4	4	4	5
Experiential learning	*Overall burnout recovery process*	5	4	4	5	3	5
Context							
Affinity with nature	*Overall burnout recovery process*	5	4	4	5	4	4
Private life	*Overall burnout recovery process*	4	1	5	5	3	4
Employer	*Overall burnout recovery process*	5	1	4	1	1	2
Occupational doctor	*Overall burnout recovery process*	3	1	4	1	2	2

*Participants were asked to indicate the extent to which they agreed with the positive impact of outdoor therapy, its elements, and its context on the burnout recovery process. Scale interpretation: 1 = strongly disagree (very low impact), 2 = disagree (low impact), 3 = neither agree nor disagree (moderate impact), 4 = agree (high impact), 5 = strongly agree (very high impact).

**Participants were given fictitious names to ensure the anonymity of the participants.

Kristy: "My sister-in-law said that I really need help [...] I said, 'I don't feel like sitting in a little room [...] Just sitting and talking.' Then she said, 'maybe walking therapy would work for you,' and I just started Googling. And then I came across [my outdoor therapist]."

The questionnaire (see Table 8.1) and interviews also revealed that, in addition to participating in outdoor therapy, most of the participants' private lives had exerted a positive impact on their recovery processes, as they had all received social support from friends and family. At the same time, however, Lea and Ethan did experience challenges in their private lives. In their interviews, they noted that such challenges included coping with loneliness and experiencing pressure to recover quickly. Finally, whereas Mathilda described the support that she had received from her employer and occupational health physician as having been very important in her burnout recovery process, none of the other participants reported perceiving that their employers or occupational health physicians had been supportive of the recovery process.

Mathilda: "Yes, positive. I spoke to the company doctor a few times, and I also had a chat with my manager every week on Teams. It was especially nice that I was given all the space I needed to recover in peace [...] And especially what I had, I actually wanted to go back in the beginning. [...] I thought, just sit at home for two weeks and then go back to work. But it took much longer. But it was nice that I—at the time I didn't like it, but that both the company doctor and my manager stopped me. Like, 'Just take your time. I don't want you to come back yet. And you're going to work for two hours a day, for example.' [...] They also gave me a lot of space."

Ethan: "It was quite disappointing, to be perfectly honest [...] I think that I started to reintegrate after five months, and they must have had the best of intentions. They wanted me to come back, but there was no room for really quiet step-by-step reintegration. I mean, my mailbox had exploded, and they were just waiting for me to pick that up again. So, yes, when you come back to your first days and find things like that, it's just not possible [...] So I did try to go back to work, from the very beginning, even if I only worked an hour a day, I went for it. And that just wasn't yet possible at all."

Outcomes

Based on the quantitative findings (see Table 8.1), all participants perceived outdoor therapy as having had a very high impact on the recovery process in general. Concerning the perceived impact of outdoor therapy on the proximate outcomes, all participants expressed having perceived a high impact on all of these outcomes, resulting in their feeling relaxed and physically well, in addition to coming close to their own feelings.

Four participants scored high or very high on the intermediate and distal outcomes, indicating that outdoor therapy had helped them to feel healthy and have fewer burnout complaints, thus suggesting that they had recovered well. In contrast, the scores of Victoria and Ethan indicated that outdoor therapy had a low impact on various intermediate and distal outcomes, suggesting that outdoor therapy did not play a relevant role in their recovery.

In the interviews, Kristy, Lea, Mathilda, and Victoria described themselves as having recovered, whereas Ethan and Laura did not. For example, Victoria described herself as having "fully recovered on all possible aspects". In contrast, at the time of the interview, Ethan reported having no clue as to what kind of jobs would provide meaning in his life, and he, therefore, considered taking additional therapy sessions. Laura also considered taking additional therapy sessions, as she was still struggling to maintain a healthy work-life balance.

> *Laura: "I did feel better soon, but my energy didn't come back. So that remained a sticking point, so to speak. And I'm still not at 100% of what I had before, I think. Maybe that will take time, but now I am able to make different choices and distribute things a little better [...] I'm still working on it [...] I have also started a follow-up process."*

Finally, in the interviews, all participants reported going outdoors more after the therapy sessions had ended.

> *Mathilda: "Yes, the realization that going outside is super important. Whether you're recovering from burnout or not, actually [...] I had really forgotten that. I just really didn't know that anymore. I just sat at a computer all day, inside actually. I wasn't at all concerned about whether I had been outside. And now that's something that I do every day. I also have a dog now, so I have to [go outdoors], but even if I didn't have a dog, I just have a need and desire to walk outside two or three times a day. Now it's a part of my lifestyle—something that I really want to be there. Because I just really enjoy it. So, I think that it's actually going to stay with me for a lifetime."*

The Six Intervention Elements

As indicated by the quantitative findings (see Table 8.1), three intervention elements were perceived as having had a very high impact on the burnout recovery process for all participants: ***physical activity***, ***creating relationships***, and ***observing nature interactions***.

Physical Activity: According to information from the interviews, walking had allowed participants to take the "first step" (literally) in the recovery process. In addition, walking outdoors helped the participants to "straighten up" (also literally), thereby

giving them a feeling and confidence that they would be able to recover successfully. Participants shared that walking had directly "defrosted" them from all stress, in addition to making them feel relaxed and energized, both physically and mentally.

> *Laura: "I think primarily to calm down and get focused during the conversation. I get distracted easily, and when you have to talk about certain topics, it's hard to focus [...] I really noticed during the walk that you kind of defrost. For example, I started out very stressed, with a lot of tension in my body. After a while, however, I just walked in a relaxed manner, with my arms at my side, focusing on the conversation."*

The participants also experienced walking in nature (e.g., forests, city parks, heath fields) as de-stressing due to the fresh air and the opportunity to be away from the demanding stimuli of day-to-day life. They noted that walking in nature had created order and structure in their thoughts and that it had directly shifted their focus toward the conversation and the topics being discussed. They reported that they had actually felt their physical condition improving as the therapy sessions progressed. Finally, all of the participants noted that after completing the therapy sessions, walking in nature had remained an important activity, which enabled them to restore and replenish their physical and mental energy levels.

Creating Relationships: According to the interviews, participants perceived that nature had supported their relationships with their therapists in various ways. For example, they liked walking next to the therapist, as it eliminated the necessity of continuously looking at the therapist and directly replying to questions. All of the participants shared that the vibe with their therapists had felt natural, light, and relaxed, even though the topics that they discussed were quite heavy.

> *Lea: "Before the first session, I thought, 'I'm really not going to tell you everything in detail yet.' [...] At the same time, however, I told her a hundred things. I don't know what it was, but I just felt very comfortable with her. I also think that nature played a big role in that [...] It feels a bit more exciting. And in nature, you're busy [...] And walking side by side, so you can also just look in front of you or into nature. You don't have to look at each other constantly. I think that's also just really nice."*

> *Mathilda: "Well, at one point, I did follow [the therapist] in terms of route. So, at one point, she said, 'I think we should go left or right here, because I don't know where I might end up. Let's just go in here.' Then I said, 'Okay.' It was exciting; that might sound a little dull. You're doing therapy, you're on a time limit, but now we're going down a road where we don't know if we'll be back on time or where we'll end up. Then you take yourself out of the therapy context for a while. That makes it a little more relaxed."*

Participants shared that spending such a substantial amount of time outdoors with their therapists had resulted in their receiving support from the therapist, both as a professional and as a friendly sparring partner. Instead of being "two separate parties," the participant and the therapist were experienced as a connected team working on certain topics. For example, the therapist would ask the participant to walk ahead, thereby allowing them to take charge of the topics to be discussed.

Observing Nature Interactions: The interviews revealed that the participants had been encouraged by their therapists to focus and reflect on what they were seeing or experiencing in nature. They shared that they had often been "caught up" in their thoughts and unaware of what was happening around them. The feedback that the therapists provided on how the participants interacted with nature, as well as how fast, slow, or heavy they were walking, helped participants to understand their (own) feelings, emotions, behavior, or thoughts. In addition, the participants experienced focusing on what happens in nature (e.g., birds singing, people passing by, or the beauty of trees) as a "positive distraction". Such positive distractions allowed participants to "zoom out" of their problems, reflect on thoughts or emotions, or simply feel relaxed and at ease.

> *Victoria: "I think that the trees in particular give a kind of feeling of protection. The fact that there are birds singing around you, which I also didn't hear for the first few months. There are so many things to see. It's also a positive distraction from the stress. [...] In the forest, there is more to look at and reflect on than there is indoors."*

The quantitative findings (see Table 8.1) revealed mixed results for the perceived impact of three intervention elements on the burnout recovery process: ***reconnecting body and mind***, ***nature metaphors***, and ***experiential learning***. Some participants perceived the impact as very high, while others perceived the same intervention element as having had either a high or low impact.

Reconnecting Body and Mind: Kristy, Mathilda, Ethan, and Laura perceived mindfulness and meditation exercises as having had a high impact on the recovery process (e.g., by slowing down their breathing or helping them to focus on sounds in nature). In particular, these exercises helped them to slow down, de-stress, and focus on what they were feeling and thinking in the present moment. As noted by some participants, however, it takes time to learn and experience the benefits of mindfulness and meditation exercises, given the inherent difficulty of relaxing when one is burned out.

> *Ethan: "...during almost every session, we also did an exercise focused on the environment. Where you use your senses one by one. First you look, then you pay attention to all the details. Then you listen, for example, to what you hear, then you feel what the ground feels like and stroke a leaf. To be so consciously engaged*

with your environment makes you feel very relaxed. And we often did this at the beginning of a session, or when I noticed that I was very tense. To actually relax for a moment, to unwind in order to have a better conversation. That's a nice benefit."

For the participants who reported low perceived impact, two explanations were found. Victoria explained that the therapist simply did not do any mindfulness or meditation exercises. Lea noted that she really did not like such exercises and that they could potentially result in even more stress rather than helping her to feel at ease.

Lea: "I find them so cringe-worthy, I get all itchy about mindfulness. I'm not someone who can sit on a bench. I can sit on a bench and enjoy a sunset, but I can't sit on a bench and think, 'Now, I'm going to enjoy the sunset.' With me, it has to come spontaneously."

Nature Metaphors: In their interviews, Kristy, Lea, Mathilda, and Victoria reported experiencing nature metaphors as having had a high impact on the recovery process. Natural elements (e.g., trees, the sun, and drawings in the sand) were used to help participants understand what they were thinking or feeling, as well as to clarify theoretical concepts used in CBT.

Kristy: "...[the therapist] asked at one point what I was seeing that gave me strength and where did I want to go [...] And that was a row of trees. They were standing in a row, really neat and straight, and they still had their branches. The leaves were already gone, but the branches were still standing straight up. And that really gave a bit of a feeling like, 'I'm here. Bring it on. I can handle it.' And then she asked if I wanted to take a picture of it. I also printed it out and hung it on my fridge. That's a nice example. And we've also used the sun, for example, because it's just a powerful thing."

Participants shared that nature metaphors had helped them to understand their feelings, emotions, strengths, and weaknesses and that such metaphors had triggered new narratives on how to cope with challenges in work or private life. For example, some participants noted that, like nature, they needed structure, rest, and time for recovery in order to "flourish." This enhanced a sense of control over their recovery process. During their interviews, Ethan and Laura reported perceiving nature metaphors as having had a low impact on the recovery process. For Ethan, nature metaphors were simply not used in the therapy, while Laura experienced them as vague, abstract, and not her preference.

Experiential Learning: In their interviews, Kristy, Lea, and Victoria identified experiential learning as having had a high impact on the recovery process. It helped them

to strengthen their coping strategies (e.g., setting limits by saying, "Stop" as the therapist approached them). It also helped them to experience that they could do more than they thought possible (e.g., running uphill or feeling as if nothing would go wrong).

> *Victoria: "We were facing each other in the forest. She was standing about 10 feet in front of me, and she took one step each time. And when I couldn't take it anymore, I had to say, 'Stop.' [...] And she kept on walking, and that was very intense, because something was coming toward me, which I couldn't stop and put so much pressure on me. It was really [...] I just broke down. I thought, 'I really don't want to experience this again.' But it's a good thing to do, because it lets you feel that, if you don't set your limits in real life, things will come crashing down on you. That was an intense exercise, but helpful to my recovery."*

As demonstrated in the interviews, Mathilda, Ethan, and Laura perceived experiential learning as having had a low impact on the recovery process. For Mathilda and Ethan, experiential learning exercises were simply not used in the therapy, and Laura had experienced these exercises as not helpful at all.

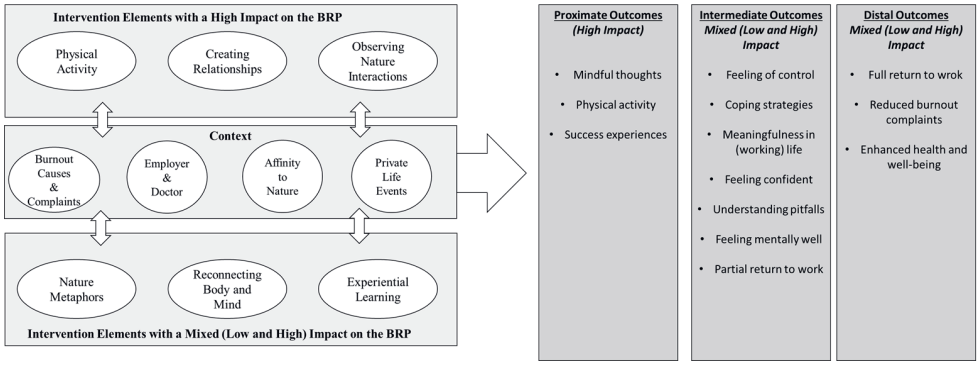

Figure 8.2. Summary of the results (BRP: burnout recovery process).

Discussion

Using our evaluation model of outdoor therapy for employee burnout (Pijpker et al., 2022), the perceived impact of the six intervention elements on the recovery process was assessed retrospectively, both quantitatively and qualitatively. The results (summarized in Figure 8.2) suggest that the perceived impact of three intervention elements—*physical activity*, *creating relationships*, and *observing nature interactions*—enhanced various proximate, intermediate, and distal outcomes for all participants. The results were mixed with regard to the perceived impact of *reconnecting body and mind*, *nature metaphors,*

and *experiential learning*, suggesting that these intervention elements had exerted both low and high impact on the outcomes. Finally, the perceived impact of all intervention elements on the burnout recovery process depended on the context of the participants (e.g., preferring or not preferring mindfulness exercises) and the context of the therapy (e.g., in some cases, the therapist had not used all of the intervention elements).

To our knowledge, this is the first study in which an *a priori* evaluation model has been used to conduct an empirical investigation of the processes underlying the perceived impact of outdoor therapy on employee burnout. Although previous observations and experimental studies have reported evidence that outdoor interventions have a positive effect on various outcomes (Sahlin et al., 2015, Grahn et al., 2017; Van den Berg & Beute, 2021), none have explicitly explored the processes underlying these effects. We complement this body of research by indicating whether and how the perceived impact of the six intervention elements may support the burnout recovery process.

Outcomes and Context

In line with other studies (Sahlin et al., 2015, Grahn et al., 2017; Van den Berg & Beute, 2021), our results suggest that outdoor therapy supports a range of short-term and long-term outcomes. All of the participants reported having experienced improvement on all of the proximate outcomes measured, although the results for the intermediate and distal outcomes were relatively mixed. For example, some clients reported that these outcomes had not had any impact on their sense of control over the recovery process—which is an important variable in the burnout recovery process in general (Pijpker et al., 2021)—whereas other clients reported them as having had a high impact. It should also be noted that, as reported in other studies, even after two to four years, a significant proportion (25%–50%) of clients with burnout have not yet fully recovered (Van Dam et al., 2012; Eskildsen et al., 2016; Dalgaard et al., 2020). Our results are in line with these observations, as not all of the participants had fully recovered after completing their therapy sessions. Interestingly, our study suggests that even though several participants scored high on various direct and long-term outcomes on the questionnaire—thus suggesting recovery–the interviews indicated that not all of them *felt* as if they had recovered. This implies that the meaning of recovery can differ between clients (Pijpker et al., 2021), echoing the call for customized therapeutic goals based on what clients define as recovery (Langeland & Vinje, 2022).

Finally, the capacity of employees to detach from work and affiliate with others in their non-working lives (Pijpker et al., 2022) and positive changes in the work environment (e.g., receiving social support from the employer or reducing workload) are known to be very important in supporting recovery from burnout (Pijpker et al., 2020; Pijpker et al., 2021). Consistent with this line of evidence, our study demonstrates that events in private life and the working context can either support or hinder the recovery process and that outdoor therapy cannot always address such factors. For this reason,

outdoor therapy should be combined with customized interventions in the private and working lives of clients.

Intervention Elements

Although we are not able to say how much such activity increased, the results for the first intervention element (physical activity) suggest that outdoor therapy increased the habitual physical activity levels of participants. This observation is in line with the literature, in which the impact of outdoor therapy is partly attributed to being more physically active, with "walking" in the "outdoors" helping clients to defrost when exploring difficult issues, to feel more relaxed, and to experience better overall physical and mental well-being (Revell, 2017). In addition, our study complements the literature by suggesting that, after completing all of their therapy sessions, the participants had continued to walk outdoors more than they had before starting the therapy, in order to maintain their health and well-being. Another complementary observation is that walking supported a feeling of control over the recovery process, which is a key predictor of recovery from burnout (Pijpker et al., 2021), as participants literally "took the first steps" and "straightened up" immediately upon starting the therapy.

With respect to the second intervention element (*reconnecting body and mind*), we found that doing mindfulness and mediation exercises in nature helped some participants to understand their feelings, emotions, and thoughts in the present moment. This observation is in line with a range of experimental studies indicating that these exercises enhance attention, positive emotions, emotion regulation, self-realization, and well-being, in addition to reducing stress and negative emotions (Eberth & Sedlmeier, 2012). Mindfulness and meditation exercises have been shown to be more "effortless" when they are performed in nature than when they are performed indoors due to the restorative qualities of nature (e.g., being away from stressful stimuli), which can help to restock concentration or other depleted attention resources (Lymeus et al., 2018). Moreover, studies have suggested that the natural setting improves compliance with mindfulness and mediation exercises (Lymeus et al., 2019).

The results for the third intervention element (*nature metaphors*) suggest that using nature as a tool for reflection on feelings, emotions, desired goals, or concepts used in CBT helped some participants to recover. It supported their ability to accept that recovery from burnout takes time while also increasing their sense of control over the recovery process. This observation strongly aligns with those of earlier studies in which nature metaphors were used to encourage acceptance of outcomes not under the client's control by relating such challenges to the uncontrolled dynamics of nature (e.g., weather; Corazon et al., 2012). In addition, as also shown in our study, nature metaphors can enable clients to become more self-aware and to "internalize" the power of nature to access their inner strength (Berger, 2010; Revell & McLeod, 2017).

Reflecting on the fourth intervention element (*creating relationships*), our results

suggest that the natural setting supported the relationship between participants and their therapists in several ways. Although studies have consistently indicated that the relationship between a client and a therapist is important to the success of a therapy trajectory (Keijsers et al., 2000), our study suggests that nature strengthens this relationship in various ways. In particular, participants reported that the vibe with their therapists felt natural, not heavy, and relaxed, even though the actual topics that they discussed were quite heavy. Explanations include walking next to each other, which eliminates the necessity for participants to look at their therapists continuously or to reply to their questions directly. In line with our findings, one possible explanation reported in the literature is that both clients and their therapists develop a relationship with nature, such that they experience nature as a safe setting (Bettmann & Jasperson, 2008). In addition, as reported in other studies, therapists tend to be perceived not only as professionals but as friends or "fellow travelers" who highlight aspects of or amplify experiences in nature (King & McIntyre, 2018).

With regards to the fifth intervention element (*observing nature interactions*), the results suggest that feedback from the therapists on how participants interact with nature helped participants to understand feelings, emotions, behavior, or thoughts. This is in line with previous studies indicating that therapists are able to assign meaning to how clients behave in nature (e.g., how heavily they walk) and to whether clients notice what is happening around them (Cooley et al., 2020). Our study complements these findings by demonstrating that participants experience what happens in nature (e.g., the sound of birds, people passing by, or the beauty of trees) as a "positive distraction" in the therapy. Such distractions enable participants to zoom out of complex thoughts or simply to relax, feel at ease, and concentrate better. This observation can be explained in terms of attention restoration theory (Kaplan, 1996), which holds that in addition to being enjoyable, being in nature can help to improve focus and the ability to concentrate (Ohly et al., 2016).

The results for the last intervention element (*experiential learning*) suggest that specific exercises in nature that focus on learning by doing helped participants to strengthen coping strategies (e.g., setting limits) or gain confidence concerning the recovery process. The findings are in line with those of previous studies showing that role-playing or other activities with natural elements help clients to cope with situations and roles that are challenging to them in everyday life (Berger & McLeod, 2006).

Although our findings on several intervention elements (i.e., reconnecting body and mind, nature metaphors, and experiential learning) are in line with the perceived benefits reported in the literature, not all of our participants liked them, as they experienced them as "vague," "too abstract," or even as resulting in more rather than less stress.

Limitations and Future Directions

This study is subject to several limitations and strengths that should be considered when

interpreting the results. First, the sample was small and consisted of former clients who already had a strong affinity with nature before starting the therapy. It would be interesting to examine whether and how outdoor therapy supports the burnout recovery process for clients who do not have a strong affinity with nature. Second, given the small sample and the retrospective evaluation design used in this study, no direct conclusions can be drawn with regard to the effectiveness of the outdoor intervention. At the same time, however, our use of an *a priori* evaluation model (Pijpker et al., 2022) to conduct a retrospective examination of the perceived impact of outdoor therapy on various outcomes resulted in rich, context-sensitive evidence of whether and how outdoor therapy may work for employee burnout. Based on these "stepping stones", future studies could use both quantitative and qualitative elements to provide longitudinal validation and test the effects of the six intervention elements on the burnout recovery process. Accordingly, the inclusion of objective outcomes (e.g., potential reductions in sick leave) could also enhance the examination of whether and how outdoor therapy works for employee burnout. Finally, in light of our finding that three intervention elements worked for some participants but not for others, further research is needed in order to investigate what works, focusing on the context of the client and the therapy.

Conclusion

The study indicates whether and how the implementation of the six intervention elements within the underlying context could support the recovery process after burnout. It also suggests that three intervention elements—being more active in nature (physical activity), using nature to support the relationship between client and therapist (creating relationships), and having the client interact with nature (observing nature interactions)—could potentially have positive effects on various direct and long-term outcomes. Other intervention elements—doing mindfulness and meditation exercises in nature (reconnecting body and mind), using natural elements as a mirror for reflection (nature metaphors), and using natural elements for specific exercises (experiential learning)—may also work for some clients. In future studies, scholars are encouraged to use our evaluation model to conduct a longitudinal test of whether and in which contexts the intervention elements support the burnout recovery process, preferably using mixed methods.

Author Statement: All of the authors developed the idea and design of the study. R.P. was involved as principal investigator in the empirical research and wrote the initial draft of the manuscript. All of the authors discussed the text of the manuscript and results, and all contributed to the final manuscript.

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9

Chapter 9

General discussion

Introduction

In the Netherlands, burnout is known to impair employees' health and well-being over time, resulting in high sick leave and replacement costs (Ahola et al., 2009; Ruitenburg et al., 2012; Hassard et al., 2018). Although much research has been devoted to the predictors and consequences of burnout (Salvagioni et al., 2017), a major gap in the scientific literature is the lack of knowledge concerning how employees recover after burning out (Hakanen et al., 2017). Additionally, evidence-based best-practice interventions for employees who drop out of work due to burnout are rarely designed and studied and are generally lacking in the scientific literature (Demerouti et al., 2017). Simultaneously, based on the health-promoting effects of nature exposure (Hartig et al., 2014), outdoor therapies for employees with burnout are emerging (Sahlin et al., 2014; Shalin et al., 2015; Grahn et al., 2017, Van den Berg & Beute, 2021). Although evidence for the effectiveness of outdoor therapies for employee burnout is starting to accumulate, very little is known about how such outdoor therapy interventions work, for whom, when and why (Annerstedt & Währborg, 2011). Therefore, in this thesis, I aimed to examine the value of outdoor therapy for the recovery process after burnout. More precisely, I explored the mechanisms preventing employees from developing severe burnout complaints (*Chapter 4*), examined the mechanisms underlying a successful recovery process after dropping out of work due to burnout (*Chapters 5 and 6*), and investigated whether and how outdoor therapy supports this salutogenic process (*Chapters 7 and 8*).

In this chapter, I first answer each research question separately, simultaneously providing a summary of the results of my research. After that, I reflect on the findings in relation to the scientific literature. Following this reflection, I discuss the methodological limitations and strengths. I then present the implications for practice as well as areas for further research. Finally, I integrate all findings to conclude with a discussion on the value of outdoor therapy for the recovery process of employees with burnout, thereby addressing the overarching research objective of this thesis.

Answers to the Research Questions

Table 9.1 presents the answers to each research question.

Table 9.1. Summary of main findings.

Thesis Chapter	Research Question	Methods	Main Findings
			Burnout prevention
Chapter 4	1. Which mechanisms in employees' non-working time protect employees against the development of burnout?	Questionnaire; longitudinal design	· All six Off-Job Crafting dimensions (i.e., Detachment, Relaxation, Autonomy, Mastery, Meaning, Affiliation) correlated negatively with burnout both cross-sectionally and longitudinally. · Employees who crafted (all six Off-Job Crafting dimensions combined) before and during the COVID-19 crisis reported fewer burnout during the crisis. · Employees who *crafted for detachment* before and during the COVID-19 crisis reported fewer burnout during the crisis. · Employees who *crafted for affiliation* before and during the COVID-19 crisis reported fewer burnout during the crisis. · OJC may act as a buffer mechanism protecting against burnout during the COVID-19 crisis.
			Burnout recovery
Chapter 5	2a. How effective are existing combined burnout interventions? 2b. Which mechanisms influence the effectiveness of existing combined burnout interventions?	Literature review	· The included studies were diverse in terms of intervention content, study design, research method and burnout measures. · All combined interventions showed to a certain extent an effect on reducing burnout complaints and supporting the return to work process. · Enhancing employees' job control, social support, participation in decision-making and workload are important mechanisms influencing the effectiveness of the interventions, as well as reducing perceived workload. · The included studies had a moderate to high risk of bias, and therefore the results should be interpreted with caution.
Chapter 6	3. Which mechanisms explain a successful recovery after burnout?	In-depth interviews; interpretative phenomenological analysis; timelines	· The burnout recovery process entails four faces in which various GRRs/SRRs are addressed: 1. Facing the Crisis (GRR: accepting the situation; SRR: label being sick; GRR: resting; SRR: financial security) 2. Addressing Root Causes (GRR: daily structure; GRR: physical activity; GRR: Nature; SRR: therapies/professionals, GRR: connectedness) 3. Seizing and Realizing the Opportunity (GRR: approval; GRR: reflecting; GRR: courage; SRR: openness) 4. Staying at Work: (SRR: meaningfulness; GRR: awareness; GRR: confidence) · Receiving social support and experiencing a feeling of control over the recovery process are two overarching GRRs. · Employees learned to be aware of potential pitfalls that could trigger burnout symptoms, while having confidence in their ability to prevent burnout from reoccurring. · These continuous learning processes were experienced as a prerequisite to remain at work. · A full or partial RTW does not mean that employees do not experience burnout complaints anymore.

The value of outdoor therapy for employee burnout			
Chapter 7	4. How and to what extent does outdoor therapy builds on the mechanisms underlying successful recovery after burnout?	Semi-structured interviews; content analysis; case study design	· Outdoor therapy entails six intervention elements: 1. Physical activity (i.e., walking in nature) 2. Reconnecting body and mind (i.e., mindfulness and meditation exercises in nature) 3. Nature metaphors (i.e., using nature as a tool for reflection on goals, feelings and situations) 4. Creating relationships (i.e., nature supports the relationship between client and their therapists) 5. Observing natural interactions (i.e., reflecting on how the client interact with nature) 6. Experiential learning (i.e., doing specific exercises in nature to learn/strengthen coping skills or set limits) · The implementation of these elements may facilitate the recovery process after burnout in which proximal (e.g., feeling at ease), intermediate (e.g., partial RTW), and distal outcomes emerge (e.g., reducing burnout complaints). · Effect of intervention elements depend on the context the therapist (e.g., number of clients per day), therapy (e.g., privacy issues), and of the clients (e.g., affinity to nature). · Outdoor therapy builds on the mechanisms underlying a successful recovery after burnout. · However, the model needs to be further tested among a larger group of clients to empirically evaluate whether and how outdoor therapy can support the burnout recovery process.
Chapter 8	5a. What is the perceived impact of outdoor therapy on the recovery process of employees with burnout? 5b. Which mechanisms explain the perceived impact of outdoor therapy on the recovery process of employees with burnout?	Questionnaire; interviews; retrospective impact assessment	· Outdoor therapy seems to support – to a certain extent – the burnout recovery process. · The results showed a promising potential for the intervention elements of being more active in nature (*physical activity*), nature supporting the relationship between client and therapist (*creating relationships*), and the client interacting with nature (*observing nature interactions*) on various direct and long-term outcomes. · The intervention elements of doing mindfulness and meditation exercises in nature (*reconnecting body and mind*), using natural elements like a mirror for reflection (*nature metaphors*), and using natural elements for specific exercises (*experiential learning*) may have a positive impact on the burnout recovery process. · The results showed that the context of the client, in particular having a preference for certain exercise in nature influences whether elements have a positive impact on the burnout recovery process. This also counts for the context of the therapy as not all therapists applied all six intervention elements.

Note. GRR = Generalized Resistance Resources; SRR = Specific Resistance Resources.

Research Question 1. Which mechanisms in employees' non-working time protect employees against the development of burnout?

To answer this research question, I examined how employees recover from work in their non-working time (Chapter 4). More specifically, together with my colleagues at the Center of Salutogenesis in Zurich, I examined the relationship between off-job crafting (OJC) and burnout during the COVID-19 crisis. OJC crafting is defined as "*a motivated process including the goal-directed initiation of and engagement in crafting efforts intended to satisfy psychological needs*" (de Bloom et al., 2020, p. 1424), operationalized by the following six dimensions: detachment, relaxation, autonomy, mastery, meaning, and affiliation (Newman et al., 2014).

The study used a longitudinal research design, comprising one wave collected before the onset of the pandemic in March 2019 and one wave collected during the first lockdown of the crisis in April 2020. Via a questionnaire, the six OJC dimensions (Crafting for Detachment, Relaxation, Autonomy, Mastery, Meaning and Affiliation) and burnout were measured among German and Swiss employees ($N = 658$). Correlation and regression analyses were used to explore the potential relationship between OJC and burnout cross-sectionally and longitudinally.

We showed that all six OJC dimensions and burnout correlated negatively, cross-sectionally and longitudinally. I further showed that employees who crafted in their off-job time before the crisis experienced fewer burnout complaints during the crisis. Looking more closely at the subdimensions of OJC, employees who crafted for detachment and affiliation before the crisis reported less burnout during the crisis. This means that employees who are able to "switch off" from their thoughts related to work and tasks during off-job time (*OJC for Detachment*), and experience being closely related and emotionally connected to others (*OJC for Affiliation*) report fewer burnout complaints than employees who are not able to satisfy those psychological needs in their non-working time.

I conclude that OJC, in particular OJC for detachment and affiliation, is a promising mechanism enabling employees to prevent the onset of severe burnout complaints.

Research Question 2a. How effective are existing combined burnout interventions?

To examine the effectiveness of combined interventions (i.e., both person-directed and organization-directed) on burnout complaints and the return to work (RTW) process, I conducted a systematic literature review (Chapter 5). Ten studies were included in the review, and all had a considerably high risk of bias.

With regard to the reduction of burnout complaints, I found that the combined interventions led to greater improvement in exhaustion and cynicism in both the short term (after 4 months) and the long term (after 12 years) than in professional efficacy. In terms of promoting RTW, the combined interventions showed long-term effects

on the promotion of partial and full RTW. For example, Blonk and colleagues (2006) showed that Cognitive Behavioral Therapy-based stress management (i.e., *person-directed intervention*) combined with meetings with labor experts aimed at changing the work context (i.e., *work-directed intervention*) resulted in a faster RTW process when compared to participants in the control groups. Participants in those control groups received only a person-directed intervention or did not participate in any intervention. Burnout complaints were reduced in the combined intervention group and the two control groups.

The ten studies I included in this review all had a considerably high risk of bias. I cautiously conclude that combined interventions are – to a certain extent – effective in supporting the RTW and reducing burnout complaints. Additionally, combined interventions seem more effective in reducing burnout complaints and supporting the RTW process than only using person- or organization-directed interventions.

Research Question 2b. Which mechanisms influence the effectiveness of existing combined burnout interventions?

In the same systematic literature review, I also focused on identifying the mechanisms that influence the effectiveness of the combined interventions (Chapter 5). I conclude that very few of the studies devoted much attention to evaluating potential mechanisms that could properly explain their results and clarify why and how the combined interventions did or did not work. Moreover, only three studies included any empirical (or other) examined mechanisms in order to explain this. These studies suggest that enhancing employees' sense of job control (i.e., decision authority over their jobs), social support (e.g., positive feedback from supervisors), participation in decision-making (e.g., selecting stressors and mismatches), and reducing workload can facilitate reductions in burnout complaints and support the RTW process.

Research Question 3. Which mechanisms explain a successful recovery after burnout?

To unravel the mechanism explaining a successful recovery after burnout, I used interpretative phenomenological analysis as a methodological framework to explain the experiences of nine employees underlying their recovery after burnout (Chapter 6). Furthermore, I used the salutogenic model of health (Antonovsky, 1979; 1986) which focuses on understanding and explaining factors that support health and well-being. The salutogenic model assumes that stressful events are an inherent part of life and that the development of health depends on an individual's ability to adapt to what happens to them (Lindström & Eriksson, 2010). In this vein, I defined burnout as one such stressful event, focusing on how employees restore their ability to recover successfully.

Before proceeding, I first recall the three salutogenic main concepts: the sense of coherence (SOC), General Resistance Resources (GRRs) and Specific Resistance

Resources (SRRs). The concept of SOC refers to the extent to which people experience life as comprehensible, manageable and meaningful (Antonovsky, 1979). People with a strong SOC are able to use GRRs/SRRs to cope well with stressors, thereby maintaining or developing their health and well-being. GRRs and SRRs are the prerequisites for the development of a strong SOC. A GRR is any characteristic of the person, the group or the environment that can facilitate effective coping (Idan et al., 2022). While GRRs are used to deal with stressors in various contexts, SRRs differ from GRRs in that they are specific to particular stressful events (Mittelmark et al., 2022). By successfully coping with stressful life events (e.g., by changing jobs), employees continuously learn to identify, mobilize, and use (or reuse) GRRs/SRRs, thereby strengthening their SOC (Mittelmark et al., 2022). For this study, I defined GRRs as resources supporting the burnout recovery process, such as receiving social support from family, but also as resources enabling employees to cope with many different kinds of stressors in everyday life. In contrast, SRRs support the ability to cope with specific challenges related to the consequences of being burned out, such as using professional help to prevent the reoccurrence of burnout. In this study, I explicitly focused on identifying GRRs and SRRs that support the successful burnout recovery process.

My analysis showed that the recovery process comprises four phases, including various GRRs/SRRs for each phase (Figure 9.1):

1. Facing the Crisis (GRR: accepting the situation, SRR: label being sick, GRR: resting, SRR: financial security)
2. Addressing Root Causes (GRR: daily structure, GRR: physical activity, GRR: Nature, SRR: therapies/professionals, GRR: connectedness with work)
3. Seizing and Realizing the Opportunity (GRR: approval of restored limits and capacities, GRR: reflecting, GRR: courage, SRR: openness)
4. Staying at Work: (SRR: meaningfulness, GRR: awareness, GRR: confidence)

Essential overarching GRRs facilitating successful recovery after burnout are receiving social support from family, friends, and colleagues, and having a feeling of control over the recovery process. Participants continuously learned to be aware of potential pitfalls that could trigger burnout symptoms while having confidence in their ability to prevent burnout from reoccurring. I found that these continuous learning processes were experienced as a prerequisite to remaining at work. Finally, I found that a full or partial RTW does not mean that employees no longer experience burnout complaints.

I conclude that the burnout recovery process is explained by the GRRs/SRRs in the four recovery phases, as well as the two overarching GRRs of social support and feeling control over the recovery process. As GRRs/SRRs are known to be prerequisites for the development of a strong SOC, I speculatively theorize that these GRRs/SRRs constitute SOC-strengthening life experiences.

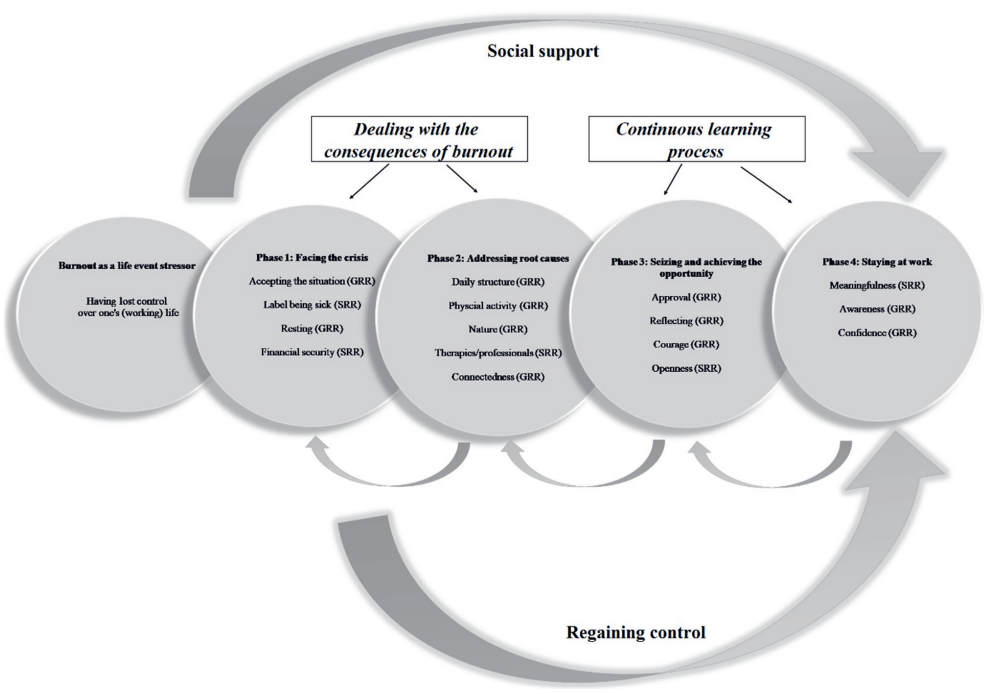

Figure 9.1. Burnout recovery model.

Research Question 4. How and to what extent does outdoor therapy builds on the mechanisms underlying successful recovery after burnout?

For this research question, I aimed to understand how and to what extent outdoor therapy builds on the mechanisms underlying the burnout recovery process (Chapter 7). Focusing on walking therapy – an exemplary case of outdoor therapy intervention for employees in the Netherlands – I developed an intervention and evaluation model. I used the generic context, process and outcome (CPO) evaluation model (Fridrich et al., 2014) and the burnout recovery model (Figure 9.1) as an overarching deductive frame. I then inductively specified the intervention and evaluation model of outdoor therapy, building on the following qualitative data: semi-structured interviews with outdoor clinical psychologists and former clients; a content analysis of the intervention protocol; and reflective meetings with the intervention developers and health promotion experts.

The model I developed shows that outdoor therapy entails six intervention elements (Figure 9.2):

1. Physical activity (i.e., walking in nature)
2. Reconnecting body and mind (i.e., mindfulness and meditation exercises in nature)

3. Nature metaphors (i.e., using nature as a tool for reflection on goals, feelings, and situations)
4. Creating relationships (i.e., nature supports the relationship between client and therapists
5. Observing natural interactions (i.e., reflecting on how the client interacts with nature
6. Experiential learning (i.e., doing specific exercises in nature to learn/strengthen coping skills or set limits)

I found that the implementation of these elements may facilitate the recovery process after burnout in which proximal (e.g., feeling at ease), intermediate (e.g., partial RTW) and distal outcomes (e.g., reducing burnout complaints) emerge. Finally, I showed that this implementation process depends on the context of the therapist (e.g., number of clients per day), the therapy (e.g., privacy issues) and the clients (e.g., affinity to nature).

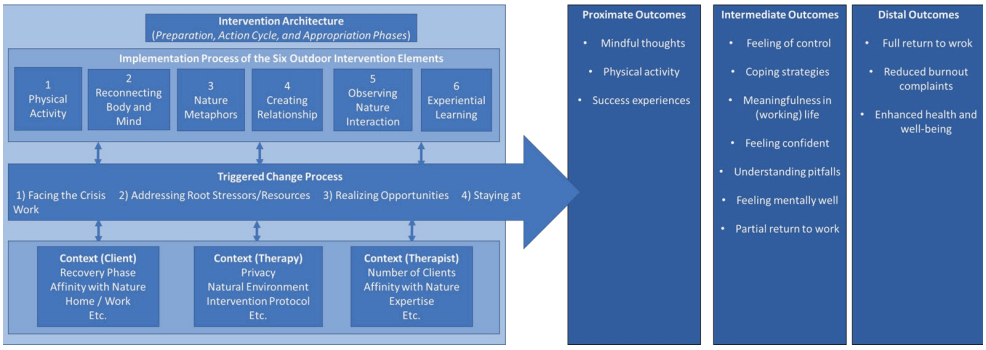

Figure 9.2. Intervention and evaluation model of outdoor therapy for employee burnout

I conclude that the intervention and evaluation model for outdoor therapy is useful to understand how key outdoor intervention elements may contribute to the recovery process after burnout. However, I emphasize that the model needs to be further tested among a larger group of clients to empirically evaluate whether and how outdoor therapy can support recovery after burnout.

Research Question 5a. What is the perceived impact of outdoor therapy on the recovery process of employees with burnout?

To answer this research question, I retrospectively examined the perceived impact of outdoor therapy on the burnout recovery process (Chapter 8). Based on the intervention and evaluation model (Figure 9.2), I quantitatively (questionnaires) and qualitatively (interviews) measured the perceived impact of outdoor therapy on various proximate, intermediate and distal outcomes among six participants.

I found that all participants perceived outdoor therapy as very positive for their burnout recovery process in general. Concerning the perceived impact of outdoor therapy on the proximate outcomes, all participants expressed having experienced a high impact on all of these outcomes. For example, participants reported feeling relaxed and physically well as a direct result of the outdoor therapy. With regards to the perceived impact of outdoor therapy on the intermediate and distal outcomes, four participants scored high or very high, indicating that outdoor therapy had helped them to feel healthy and have fewer burnout complaints. In contrast, the scores of two participants indicated that outdoor therapy had a low impact on various intermediate and distal outcomes, such as having a feeling of control over the recovery process. This suggests that outdoor therapy did not play a role in these outcomes. As expected, the results of the qualitative findings were, to a large extent, in line with the quantitative findings. However, for two participants, the results were contradictory. One participant reported a high impact of outdoor therapy on all outcomes in the questionnaire – suggesting full recovery from burnout – but shared in the interviews not feeling recovered and aiming to take additional therapy sessions. Similarly, the other participant reported mixed impacts on the outcomes – suggesting partial recovery from burnout – but shared the feeling of being completely recovered in all possible aspects. It should be noted that the sample was very small and that I retrospectively focused on former clients.

With caution, I conclude that outdoor therapy seems to support the burnout recovery process in general, as well as various direct and long-term outcomes.

Research Question 5b. Which mechanisms explain the perceived impact of outdoor therapy on the recovery process of employees with burnout?

In the same retrospective impact assessment, I also focused on understanding whether and how the six intervention elements supported the burnout recovery process, using the same quantitative and qualitative approach (Chapter 8).

I found a promising potential for the intervention elements of being more active in nature (*physical activity*), nature supporting the relationship between client and therapist (*creating relationships*), and the client interacting with nature (*observing nature interactions*) on various direct and long-term outcomes. The intervention elements of doing mindfulness and meditation exercises in nature (*reconnecting body and mind*), using natural elements like a mirror for reflection (*nature metaphors*), and using natural elements for specific exercises (*experiential learning*) may work too for some clients. For these last three elements, I found that the context of the therapy, i.e., the therapist using the intervention elements or not, and the context of the client, i.e., a preference for certain intervention elements, influence whether they had a perceived impact on the burnout recovery process (Figure 9.3).

Considering the small sample and study design used, I conclude with caution that the intervention elements of physical activity, creating relationships, and observing nature

interaction support the recovery process after burnout. Depending on the context of the client and therapy, the intervention elements of reconnecting body and mind, nature metaphors, and experiential learning may support the burnout recovery process as well.

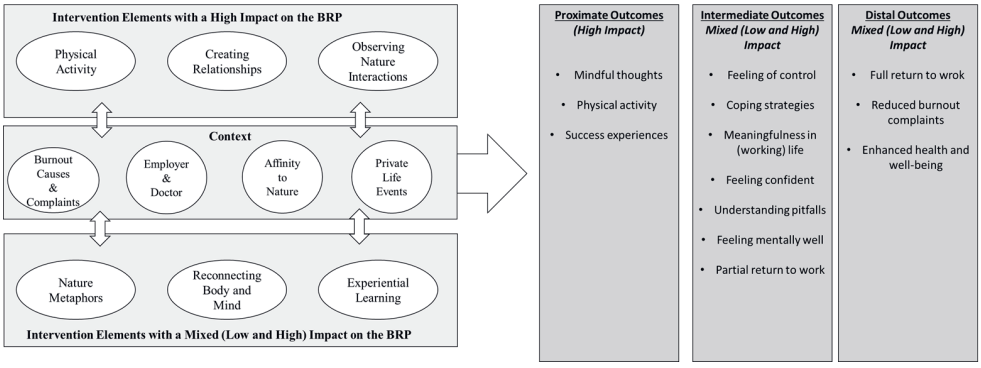

Figure 9.3. Results of the quantitative and qualitative retrospective impact assessment (BRP = burnout recovery process).

Reflection on the Findings: Theoretical Discussion

In this thesis, I applied salutogenesis as an overarching perspective to understand: 1) the mechanisms preventing the development of severe burnout (Chapter 4); 2) the mechanisms underlying a successful burnout recovery process (Chapters 5 and 6); and 3) whether and how outdoor therapy supports this process (Chapters 7 and 8). The burnout and outdoor therapy literature often adopt a pathogenic approach, focusing on the causes of burnout or symptom reductions (Annerstedt & Währborg, 2011; Hakanen & Bakker, 2017). Using the salutogenic perspective, I examined employees' capacities and resources in their physical or social environments that enable them to prevent and recover from burnout in general. Additionally, the salutogenic perspective theoretically guided me to understand the value of outdoor therapy for employee burnout. In this section, I reflect on the findings from a salutogenic perspective, as well as on how the findings relate to the four general pathways between nature and health (Hartig et al., 2014) and attribution theory (Koelen & van den Ban, 2004) as introduced in Chapters 1 and 2. Finally, I will reflect on what my study adds to salutogenesis scholars.

Burnout Prevention

The *first main finding* of my thesis is that OJC can act as a buffer mechanism against burnout complaints, in particular for employees who craft for detachment and affiliation (Chapter 4). From a salutogenic perspective, the ability to detach from work-related

thoughts can be considered a GRR supporting employees' capacity to deal with work-related challenges. For example, in their ground-breaking work, Sonnentag and Fritz (2015) developed the "stressor-detachment model", showing psychological detachment to act both as a mediator and moderator in the relationship between stressors and burnout. However, their findings also show that employees detach less from work when facing many work-related stressors, reflecting a context where detachment would be particularly needed to recover from stress (Sonnetag & Fritz, 2015). To enable employees to craft for detachment in their non-working time, it is important to reduce their work-related stressors, thereby preventing the onset of severe burnout complaints. Additionally, being emotionally connected with others relates to the GRR social support, which has been shown to be protective against burnout complaints (Etzion & Vestman, 1992; Velando-Soriano et al., 2020).

OJC for relaxation, meaning, autonomy, and mastery was not found to be predictive of burnout complaints. Since other studies have shown that experiencing autonomy and meaning are important GRRs in the workplace protecting against burnout (Bakker et al., 2005; Scanlan & Hazelton, 2019), it is possible that feelings of meaningfulness and autonomy in one's off-job time do not contribute to preventing burnout. It would be interesting to explore the role of OJC for autonomy and meaning in burnout prevention when employees do not experience autonomy or meaning at their work. Likewise, I would find it worthwhile trying to understand why I found that OJC for relaxation and mastery did not seem to buffer against burnout. One possible explanation could be that employees who develop burnout complaints impair their ability to find the "relax button", and that their work is so (cognitively) demanding that they simply do not seek to engage in challenges and learning opportunities in their non-working time.

Burnout Recovery

The *second main observation* of my thesis is that the burnout recovery process entails four phases in which various GRRs/SRRs are strengthened, facilitated by two overarching GRRs (Figure 9.1). Thus far, only a few studies have focused on recovery after burnout, all focusing on a specific burnout recovery intervention. My thesis complements by focusing on the burnout recovery process in general, i.e., everything that happens during and after recovery, regardless of the use of specific interventions. Moreover, contradictory to previous studies, I have used the salutogenic model of health to inductively identify the GRRs/SRRs facilitating the overall burnout recovery process (Chapter 6).

In line with other studies (Fjellman-Wiklund et al., 2010; Mårtensson et al., 2012; Salminen et al., 2015), my thesis shows that receiving social support from family, friends, employers, and occupational physicians and experiencing a feeling of control over the recovery process are crucial GRRs underlying burnout recovery. The observation of experiencing a feeling of control aligns with the concept of *locus of control* as proposed by Rotter (1966). He defined locus of control as a generalized expectation

of correspondence between an individual's acts and the outcomes of those acts (Rotter, 1966). The assumption is that some people tend to see consequences resulting from their behavior (i.e., internal attributions), whereas others tend to see outcomes as a result of external influences (i.e., external attributions) (Rotter, 1966). For example, Salminen and colleagues (2017) showed that the most beneficial path to recovery was observed when clients experienced personal agency and support from other life domains. My thesis confirms that when employees regain a feeling of control over their recovery process, as well as receive social support, they are able to identify and (re)use various GRRs/SRRs – potentially SOC-strengthening experiences. This aligns with salutogenic scholars showing that both social support and SOC act as a buffer against negative live events (Srensen et al., 2011), such as burnout (Gilbar, 1996; Levert et al., 2000; Rothmann et al., 2003; Van der Colff & Rothmann, 2009).

My thesis further complements existing literature by identifying various GRRs/SRRs on the individual, organizational and societal levels that facilitate coping with burnout and the recovery process. Similarly, Brusletto and colleagues (2020) have applied the salutogenic model to understand the RTW process after cancer and also identified similar GRRs, such as focusing on activities that give energy in work and private life. Likewise, SRRs such as the social security systems also played a role in the RTW process after cancer (Brusletto et al., 2020). These observations support the assumption that it is the GRRs that determine the availability of SRRs (Mittelmark et al., 2022). For example, social support from one's employer (i.e., GRR) enables employees with burnout to request and receive financial compensation for their sick leave (i.e., SRR).

The results from Chapters 5 and 6 further suggest that building GRRs in the workplace, including job autonomy, social support, and participation, while reducing stressors like workload, are of utmost importance for reducing burnout complaints and supporting the RTW process. This observation follows, to a certain extent, conclusions from other studies suggesting that strengthening resources yields more sustainable effects on employee health than reducing stressors (Pijpker et al., 2018; Brauchli et a., 2013; Jenny et al., 2022). However, the findings of my thesis suggest that reducing stressors in the workplace is just as important as strengthening resources.

My *third main finding* is that the meaning and definition of recovery is a complex phenomenon. In burnout literature, it took four decades to define and operationalize burnout in a way that both practitioners and scientists can use it in a valid and reliable way (Schaufeli et al., 2020). However, with regards to recovery, a clear definition and how to operationalize the concept is a challenge for both practice and research. I defined recovery from a salutogenic perspective, as strengthening employees' capacity to participate and be productive in a sustainable and meaningful way (Vaandrager & Koelen., 2013). This broad definition of recovery allowed me to explore what employees themselves understand as "successful" recovery. An interesting observation in Chapters

5, 6, 7, and 8 shows that a partial or full RTW does not mean that burnout complaints are reduced. This confirms the conclusions of other studies showing that even after 1 to 4 years, a substantial percentage (25-50%) of clients have not fully recovered from their complaints (Van Dam et al., 2012; Eskildsen et al., 2016; Dalgaard et al., 2021). My findings also align with other studies showing that reducing burnout complaints and supporting the RTW process are relatively independent processes (De Vente et al., 2015). Therefore, I suggest looking beyond the reduction of burnout complaints and RTW toward what clients themselves would experience as recovery in various domains. For example, recovery goals can be tailored using the four general recovery phases (see Figure 9.1), such as focusing on what gives clients meaning in their work and private life in Phase 3. It would then be interesting to see how symptom reduction and the RTW process are influenced, rather than using symptom reduction and the RTW process as "main" outcomes as done in current practice (Van Dam et al., 2017).

The Value of Outdoor Therapy for Employee Burnout

The *fourth main observation* of my results is that outdoor therapy entails six intervention elements, which are theorized to be influenced by the context of the client, therapy, and therapist (Chapter 7). Based on this interplay between intervention elements and context, various proximate, intermediate, and distal outcomes may emerge (see Figure 9.2).

When zooming in on the intervention and evaluation model of outdoor therapy for employee burnout, I identified various similarities and enriching innovative aspects. First, although various studies have reported on the effectiveness of outdoor therapy (Annerstedt & Währborg, 2011), no attempts have been made to theoretically and empirically examine whether and how such interventions may work. Therefore, my thesis adds value to the literature by showing how the six intervention elements, depending on the context of the client, therapy, and therapist, may support the burnout recovery process (See Figure 9.2). Others attempted to capture the complexity of outdoor therapy in "best practice frameworks" (Berget et al., 2010; Cooley et al., 2020) but did not theoretically explain whether and how the interventions may yield certain outcomes. Second, insights into the interplay between context, elements, and outcomes echo the call for studies focusing on the ecological validity of interventions – unravelling what works for whom, when, and in which context (Koelen et al., 2001). Since the potential relation between outdoor therapy and employee burnout is inherently complex (Chapters 7 and 8), I observed that an *a priori* theoretically grounded evaluation approach helped me to tackle this complexity.

Using my a priori evaluation model, the *fifth and final main observation* of my thesis is that all six intervention elements – to a certain extent – seem to enhance various short and long-term outcomes (see Figure 9.3). Concerning the intervention element *physical activity*, my observation is in line with the literature suggesting "walking" in the "outdoors"

supports clients to relax when exploring difficult issues and experiencing better overall physical and mental well-being (Revell, 2017). Another complementary observation is that walking supported a feeling of control over the recovery process, which is a key predictor of recovery from burnout (Chapter 6), as participants literally "took the first steps" and "straightened up" immediately upon starting the therapy. Also, my findings suggest that participants had continued to walk outdoors in nature more than they had before starting the therapy. With respect to the second intervention element *reconnecting body and mind*, my observation is in line with a range of experimental studies indicating that mindfulness and meditation exercises enhance attention, positive emotions, emotion regulation, self-realization, and well-being, in addition to reducing stress and negative emotions (Eberth & Sedlmeier, 2012). Although studies suggest that these exercises are more effortless and have higher compliance rates in nature than indoors (Lymeus et al., 2018; Lymeus et al., 2019), not all participants liked mindfulness or mediation exercises, potentially causing more rather than less stress. My observations of the third intervention element *nature metaphors* strongly align with those of earlier studies in which nature metaphors were used to encourage acceptance of outcomes not under the client's control by relating such challenges to the uncontrolled dynamics of nature (e.g., the weather; Corazon et al., 2012). In addition, as also shown in my thesis, nature metaphors enabled some participants to become more self-aware and to "internalize" the power of nature to access their inner strength (Berger, 2010; Revell & McLeod, 2017). Reflecting on the fourth intervention element *creating relationships* between therapist and client, my observations suggest that nature strengthens these relationships in various ways. In line with my findings, one possible explanation reported in the literature is that both clients and their therapists develop a relationship with nature, such that they experience nature as a safe setting (Bettmann & Jasperson, 2008). In addition, as reported in other studies, therapists tend to be perceived not only as professionals but also as friends or "fellow travellers" who highlight aspects of or amplify experiences in nature (King & McIntyre, 2018). For the fifth intervention element *observing nature interactions*, my results align with previous studies indicating that therapists are able to assign meaning to how clients behave in nature (e.g., how heavily they walk) and to whether clients notice what is happening around them (Cooley et al., 2020). My thesis complements these findings by demonstrating that participants experience what happens in nature (e.g., the sound of birds) as a "positive distraction" in the therapy and focus better. Other studies have also shown that nature can help to improve focus and the ability to concentrate (Ohly et al., 2016). My observation for the last intervention element *experiential learning* is in line with those of previous studies showing that role-playing or other activities with natural elements help some clients to cope with situations and roles that are challenging to them in everyday life (Berger & McLeod, 2006).

The findings suggest that some intervention elements (i.e., physical activity, creating relationships, observing nature interactions) yield a larger perceived impact than

others (i.e., reconnecting body and mind, nature metaphors, experiential learning). Multiple explanations can be found in the literature. For example, as suggested by my thesis, it could be that clients have a natural discomfort with doing mindfulness and meditation exercises or already had a strong attraction to natural spaces before therapy started (Cooley et al., 2020). My findings also showed that some outdoor therapists simply did not apply certain intervention elements, potentially resulting from a lack of professional confidence as therapists are working in an environment outside the one in which they have largely been trained to work (Cooley et al., 2020). My thesis shows that the therapist-client relationship is an important variable for the overall therapy experience, following conclusions from other studies that this relationship is indeed predictive of any successful therapy (Keijsers et al., 2000). Based on these reflections, my thesis suggests that the potential of the six intervention elements for burnout recovery is influenced by this broad range of contextual factors (Chapters 7 and 8).

Therapy in nature for employee burnout is increasingly gaining popularity, aiming to support recovery from symptoms and promote overall health and well-being. However, I want to emphasize that such outdoor interventions focus on the individual level: hence, it would be invalid to claim that these effects transfer or spill over to the organizational and societal level. As the results of my thesis demonstrate, recovery from burnout is explained by various interacting GRRs/SRRs on the individual level (such as taking rest), on the organizational level (for example, reducing one's workload), and on the societal level (for instance, the social security system for burnout). To support the burnout recovery process, it is therefore important to address and strengthen GRRs/SRRs in and beyond the workplace – which cannot be achieved by outdoor therapy alone. Hence, I stress to be critical about the use of outdoor therapy as 'the solution' for employees with burnout.

Reflection on the Four Pathways Underlying Nature and Health

The findings of this thesis align with the conceptual model of Hartig and colleagues (2014), showing that both *nature exposure* and *contact with nature* support the burnout recovery process.

With regards to nature exposure, the results of my thesis show that being in natural environments helped clients experience restoration from acute and chronic stress directly. In both Chapters 6, 7, and 8, people shared that they felt more relaxed, less stressed, and had a better mood in nature than in urban or built environments. Being separated from stressors and everyday stimuli was also experienced as beneficial for the burnout recovery process. These effects can be explained by psychoevolutionary theory, which asserts that for a person experiencing acute stress, exposure to nature directly triggers positive affect. This, in turn, blocks negative thoughts and feelings and the restoration of physiological stress (Ulrich, 1979; 1983). Another explanation is offered by attention restoration theory, which holds that being in nature can help improve focus and the ability to

concentrate (Kaplan, 1995; Ohly et al., 2016). All of these observations align with the *stress pathway* from Hartig and colleagues (2014). Concerning contact with nature, outdoor therapy offers various ways of enabling clients to interact with nature, thereby supporting the burnout recovery process. For example, participants shared that walking in the outdoors made them feel mentally and physically feel better – the *physical pathway* (Hartig et al., 2014). This aligns with studies showing that physical activity promotes health and well-being throughout one's life (Bize et al., 2007). In general, the findings of my thesis show that nature supports social interactions between people in various ways – the *social pathway* (Hartig et al., 2014). My study adds that the client-therapist relationship becomes less formal, and the therapy setting becomes less heavy, allowing to talk more easily about core topics. Participants also shared that they came across other people in parks and forests, which may disrupt important talks or make clients feel less 'safe' compared to the controlled indoor therapy room (Cooley et al., 2020). Finally, the *air pathway* is often being examined, focusing on reductions of particulate matter or increases in aeroallergens rather than on people's experiences (Hartig et al., 2014). My study adds that clients experienced the fresh air as beneficial for their burnout recovery process.

My thesis suggests that an outdoor therapy intervention activates various pathways simultaneously, regardless of the intervention elements. In this vein, outdoor therapy seems a promising intervention to support the burnout recovery process, acknowledging that there may be undesired harmful risks such as getting Lyme disease (Hartig et al., 2014). Speculatively, it could be that the intervention elements of physical activity, reconnecting body and mind, and observing nature interaction relate more to the direct impact of *nature exposure* on the burnout recovery process. Likewise, the intervention elements of nature metaphors, creating relationships, and experiential learning entail more *contact with nature*, thereby indirectly supporting the burnout recovery process.

The Value of Outdoor Therapy Explained by Attribution Theory

The value of outdoor therapy can also be explained by attribution theory (Koelen & van den Ban, 2004). One of the main findings is that outdoor therapy helped former clients to regain a feeling of control over their recovery process – showing similarities with the concept of locus of control (Rotter, 1996) as earlier discussed. Although not explicitly mentioned in the outdoor therapy protocol or in interviews, outdoor therapists seemed to aim to change the perceptions of clients in such a way that they feel control over their situation and resources to cope with various stressors. As shown by other studies (Brewin, 1985; Eiser & Van Der Pligt, 1986; Försterling, 1986), these perceptions are possible to change in a way that enhances a person's feeling of control. In various examples, former clients became aware that while they cannot change their work environment, they can change their way of dealing with the "fixed" environment, such as setting limits to

prevent work overload. As reflected by my findings, a prerequisite for enhancing such a feeling of control is social support from the therapist, family, friends, and preferably occupational doctor and employer. From a salutogenic perspective, developing a feeling of control and mobilizing such GRRs/SRRs are potentially SOC-strengthening life experiences (Koelen & Lindström, 2005; Srensen et al., 2011).

Added Value of the Thesis to Salutogenesis

The salutogenic perspective helped me to examine how employees prevent and recover from burnout and whether and how outdoor therapy supports the burnout recovery process. In turn, my thesis augments salutogenesis scholarship. In literature, salutogenesis has mainly been applied to *describe* how health develops in everyday life rather than as a *guide* for health promotion interventions (Bauer et al., 2020).

The intervention and evaluation model of outdoor therapy for employee burnout I developed offers an example of a salutogenic intervention. First, burnout is defined as a life event stressor and not as a dichotomous classification of being healthy or not. This aligns with Antonovsky's (1996) recommendation that health reflects a process, not a state of being. Second, the focus is on "salutory factors" instead of risk factors (Antonovsky, 1996). My thesis shows whether and how outdoor therapy restores and enhances GRRs/SRRs, such as coping skills. At the same time, the model acknowledges that GRRs/SRRs should be addressed at different levels, in particular in the workplace. Third, rather than only focusing on the "disease" by measuring burnout complaints and RTW, I measured various outcomes that are based on personal experiences of employees with burnout. This follows the recommendation of Antonovsky (1996) to focus on the entire person and not only on the disease. His last recommendation is to focus on strengthening SOC levels. Indeed, the findings of my thesis suggest that some former clients restored their SOC via outdoor therapy as they regained a feeling of control over their lives. This feeling of control generally reflects the overall SOC concept of experiencing life as comprehensible, manageable, and meaningful (Rothmann, 2001). Likewise, the fourth burnout recovery phase entails that clients restore their meaningfulness at work (*meaningfulness* component of SOC), create awareness about potential pitfalls for their burnout (*comprehensibility* component of SOC), and become confident to deal with those pitfalls (*manageability* component of SOC). This qualitative approach toward understanding potential SOC-strengthening pathways is gaining more ground in salutogenic literature (Antonovsky et al., 2022).

It should be noted that outdoor therapy only addresses clients with burnout and not the everyday context and system that they live and work in, which requires more systemic and multilevel interventions (Antonovsky, 1996; Bauer et al., 2020).

Strengths and Limitations

In this thesis, I adapted a mixed-methods design (Creswell & Creswell, 2017), with one longitudinal quantitative study, one systematic review, two qualitative studies, and one retrospective study (both quantitative and qualitative), resulting in a rich understanding of burnout prevention, burnout recovery and outdoor therapy for employee burnout. I used multiple data collection methods to extract relevant data from various sources: questionnaires (Chapter 4), a systematic literature study (Chapter 5), in-depth interviews (Chapter 6), semi-structured interviews and content analysis (Chapter 7), and a questionnaire and interviews (Chapter 8). A major strength of this mixed-methods approach (both inductive and deductive) is that my thesis resulted in mutually complementing empirical evidence to create a larger whole of the phenomena of burnout prevention, burnout recovery, and outdoor therapy for employee burnout.

At the start of the research project, I established an advisory board, including health promotion experts, outdoor therapists, one occupational doctor, and one member of the Dutch Institute for Nature and Health. Together, we discussed the research project in terms of content (for example, how to evaluate outdoor therapy) as well as process (particularly how to recruit participants for each study). The strength of this advisory board was that their expertise and experience in the field helped me define clear inclusion criteria for selecting the outdoor intervention (as discussed in Chapter 3). Another strength of involving various societal stakeholders in my research project was that I could enhance the societal impact of my project. For example, I shared my publications via the member's social media channels, participated in interviews about my study, and wrote newsletters and papers in professional journals. It should be mentioned that all people involved in the advisory board had an affinity with nature. Future projects are encouraged to involve key actors from mainstream healthcare settings where outdoor therapy is not on their radar yet.

I identified several limitations of the quantitative studies that should be taken into account when interpreting the results. A first limitation is that all measures were self-reported, which may introduce some common methodological biases, such as socially desirable answers, aggravated by the length of the questionnaires (Podsakoff et al., 2003). However, the questionnaires were constructed based on valid and reliable scales to enhance the internal validity. Since the participants were informed about the aims of the quantitative studies, answers could have been steered as a result of being aware of those aims. Second, although the OJC crafting study in Chapter 4 used panels to ensure a representative sample, the retrospective impact evaluation in Chapter 8 is prone to strong selection bias. A major cause of this selection bias is that I purposively recruited participants who completed all outdoor therapy sessions (see Chapter 3). In particular, I disclosed the aim and background of the study in the leaflets we used for the recruiting process, which inevitably has led to a self-selection bias, whereby

(former) clients who were experiencing the positive impact of outdoor therapy were more likely to participate than former clients who experienced a low or negative impact. The outdoor therapists who contributed to the recruitment process tried to reduce this potential bias by approaching all former clients to participate in the study, regardless of their recovery status or experiences with outdoor therapy. However, on ethical grounds, outdoor therapists have to be careful about probing former clients to participate in any study. Therefore, the results Chapters 4 and 8 should be generalized with caution. Simultaneously, the selection bias is also a strength of the thesis as I aimed to understand whether and how outdoor therapy may work for employee burnout. Focusing on former clients who were more likely to experience a positive impact of outdoor therapy on their recovery helped to achieve this aim.

In the qualitative studies, I used various methods to examine the mechanisms underlying the burnout recovery process (Chapter 6) and the mechanisms underlying the perceived impact of outdoor therapy on this process (Chapters 7 and 8). Concerning unravelling the burnout recovery process, I used in-depth interviews based on timelines created by the participants to support the recollection of important experiences and events in their lives (Sheridan et al., 2011). Similarly, I used PowerPoint slides containing images representing the six intervention elements to support the reflection process on whether and how these elements helped to recover from burnout. The use of timelines and images proved to be useful for analyzing the entire context and experiences underlying recovery from burnout, and the value of outdoor therapy for employee burnout. This potentially has led to new insights that may have been overlooked when not using such probing tools. As emphasized by others, using such reflexive methods should be considered a strength of my thesis because it allows participants to see and share their experiences from different angles in changing contexts (Sheridan et al., 2011). However, the use of images also possibly influenced them during the interviews.

Finally, during the research project, I faced various challenges which made it less feasible to conduct the studies as originally planned in the study protocol (Chapter 2). For example, the COVID-19 pandemic seriously hampered the recruiting process of clients, thereby disabling me from conducting a longitudinal effect and process evaluation. The changes I made to the study protocol can be considered a weakness, and questions whether valid and reliable answers can be given to the questions concerning the effectiveness and the underlying mechanisms of outdoor therapy for employee burnout. Indeed, I was unable to employ the pre-test/post-test design, making the findings of the value of outdoor therapy for employees with burnout less robust. However, by conducting a retrospective impact assessment using both quantitative and qualitative methods (Chapter 8), I was still able to validly and reliably assess the impact and processes underlying outdoor therapy (Randall et al., 2005; Nielsen & Randall, 2012). Moreover, the triangulation of quantitative and qualitative methods enhances the validity and reliability of these findings.

Recommendations for Future Research

Although my thesis complements the existing bank of knowledge, multiple knowledge gaps remain. In this section, I provide recommendations for future studies. *First*, I shortly reflect on challenges with regard to effect and process evaluations and present opportunities for research to tackle those challenges. *Second*, since my thesis focused on what is happening with the clients participating in outdoor therapy, I elaborate on why I think research should also examine the health-promoting potential of working outdoors for therapists. *Third*, I discuss the relevance of studying how outdoor therapy can be embedded in mainstream mental healthcare settings and provide suggestions for doing so. *Fourth*, I reflect on research opportunities for OJC interventions in nature for burnout prevention, and provide directions for research to tackle the more structural causes of burnout.

Evaluating Effects and Mechanisms of outdoor Therapy for Employee Burnout

Based on the traditional biomedical research paradigm, the next logical step would be to test outdoor therapy on its effectiveness and process through a Randomized Controlled Trial (RCT). RCTs are considered to be the most valid and reliable way of evaluating the effectiveness of treatments (e.g., medicines), preferably synthesized in meta-analyses, thereby building a strong evidence base for certain treatments and target groups. However, the results of my thesis show that the context in which outdoor therapy takes place is inherently complex. In this section, I argue that the effectiveness and processes of outdoor therapy cannot be captured through RCTs due to three central challenges: (1) the intervention outcome dilemma, (2) the number dilemma, and (3) the control group dilemma (Koelen et al., 2001). The *first* challenge refers to the prerequisite that intervention elements, outcomes, and context, as well as the presumed causal pathways between them, should be defined beforehand (Koelen et al., 2001). As I have shown in my thesis, the interplay between context, intervention elements, and outcomes are complex rather than linear. For example, the intervention elements can be used for any therapeutic goal in multiple burnout recovery phases. Also, changes or interventions in clients' highly diverse working and private life contexts are also difficult to predefine before conducting the experiment. Furthermore, although outdoor therapy has to a certain extent been standardized in intervention protocols, my thesis shows that not all intervention elements are used by therapists nor valued by participants. It is therefore very difficult to evaluate isolated elements of the outdoor intervention in relation to change in the outcome variables through RCTs while controlling for certain underlying contexts. The *second* challenge entails the assumption that effects and mechanisms should be measured quantitatively using valid and reliable questionnaires (Koelen et al., 2001). Although the dependent variables (e.g., burnout complaints, SOC, mental

health, RTW) can be measured in a valid and reliable way, it becomes more difficult to capture the underlying process quantitatively. The *third* and final challenge entails the difficulties associated with randomization and blinding of study participants; that is, participants should not know in which group they are allocated and should not be aware of the research question (Koelen et al., 2001). However, in countries where employees can get a burnout diagnosis, such as the Netherlands, Sweden, and Finland, randomization is problematic as clients have the right to appropriate treatment, which makes blind randomization differing by treatment unethical.

Although I do not suggest having a tailor-made solution for these three challenges, I propose several opportunities to deal with them to create a strong and robust evidence base of outdoor therapy.

- *Opportunities for Challenge 1*: For future studies, the six intervention elements and the contextual variables provide the first "stepping stones" to define various hypotheses of outdoor therapy on its effect and processes for employee burnout. In particular, the intervention elements of physical activity, creating relationships, and observing nature interactions seem to be promising regardless of the context of the clients. Taking into account the small sample of my thesis and the substantial selection bias, the intervention elements of reconnecting body and mind, nature metaphors, and experiential learning are not per se less promising and, hence, should also be evaluated further on their potential. Also, more research is needed on whether and how the intervention elements work in which context and subgroups, such as taking into account different personalities of clients, different burnout recovery phases, and what is happening in their private or working life that hampered or supported their recovery process. Finally, due to the selection bias, I did not observe any negative impacts or experiences of outdoor therapy. I therefore suggest also focusing on potential (unintended) negative effects of outdoor therapy, such as accidents or allergies that can emerge during the therapy.
- *Opportunities for Challenge 2*: I suggest future studies using mixed methods, that is, using both quantitative and qualitative measures in a complementary way. As I have shown in this thesis, the outcomes, the six intervention elements, and the context can be measured using both questionnaires and interviews. Complementary to measuring subjective experiences and self-reported outcomes, I would also encourage the use of more robust measures for the proximate outcomes, such as innovative neuroscience techniques (e.g., fMRI) validated against biomarkers (e.g., cortisol) (Tei et al., 2014; Beyes et al., 2021), and distal outcomes, such as sick leave and replacement costs. Although there are many possible confounders influencing these outcomes, the sum of its parts would enrich the overall understanding of the effects and process of outdoor therapy for employee burnout. Finally, it would be interesting to explore

whether and how the effects of outdoor therapy "spill over" to other life domains, for instance. To what extent does outdoor therapy enhance overall physical activity levels? To what extent do clients improve their social relationships with other people? To what extent is spending time in nature experienced as a resource for overall health and well-being?

- *Opportunities for Challenge 3*: I suggest future studies using longitudinal context-sensitive evaluation designs, focusing on key outcomes and appraisal of the intervention elements before, during, and after the last therapy session. If possible, a natural experiment would be desirable where participants are "naturally" divided into a control and experimental group, such as comparing clients who chose outdoor therapy with clients who chose treatment as usual indoors.

Outdoor Therapy as a Workplace Health Promotion Intervention for Therapists

My thesis has predominantly focused on the value of outdoor therapy for employees with burnout. However, it is also well known that burnout is prevalent among therapists due to high workload, such as having many clients on one single day as well as administrative obligations (Rupert et al., 2015). From a salutogenic perspective, working in nature can potentially restore therapists GRRs/SRRs, as well as their (work-related) SOC (Von Lindern et al., 2022). Speculatively, I assume that the same intervention elements protect against burnout complaints among therapists and support their overall workplace health and well-being. However, it is also possible that the outdoors is experienced by therapists as a "constraining" rather than a "restorative" setting, as they potentially relate nature to work instead of a setting to restore and replenish their resources (Von Lindern et al., 2022). Therefore, I would find it worthwhile to examine whether and how outdoor therapy supports the health and well-being of (outdoor) therapists.

Implementation of Outdoor Therapy in Mainstream Mental Healthcare Settings

The outdoor therapists involved in my thesis were mainly self-employed, not working in traditional mental healthcare organizations. The main challenges for outdoor therapy in traditional mental healthcare settings include the dominant biomedical model, where only controllable and repeatable therapy models – rather than more unstructured and holistic therapy, such as outdoor therapy – are funded by health insurers (Cooley et al., 2020). Other challenges for implementing outdoor therapy in mainstream settings are the lack of (ethical) guidelines, theoretical frameworks, and proper training for conducting therapy outdoors (Cooley et al., 2020). Being aware of these challenges, I suggest future studies should focus on the following two areas:

- I suggest that future studies can look at deviant cases. Although most outdoor therapists are self-employed, other outdoor therapists do work in mainstream healthcare settings. By understanding how they manage their daily practice on the micro level, those potential success factors can then be upscaled to the organizational macro level to increase the use of outdoor therapy in mainstream settings.
- A more objective way would be to explore to what extent outdoor therapy is "cheaper" than providing therapy indoors. For example, as suggested by Grahn and colleagues (2017), it is possible that clients need fewer therapy sessions outdoors than indoors. Also, going outdoors potentially saves costs as no money has to be paid for the indoor therapy room (Cooley et al., 2020). These observations echo the call for cost-effectiveness evaluations of outdoor therapy.

Prevention is Better than Cure

My thesis demonstrated that employees who are able to "switch off" from their thoughts related to work and tasks during off-job time (*OJC for Detachment*) and experience close relations and emotional connections to others (*OJC for Affiliation*) report fewer burnout complaints than employees who are not able to satisfy those psychological needs. However, the total concept of OJC (*including all six dimensions*) was also predictive of fewer burnout complaints. Speculatively, employees spending time in nature could provide potential OJC experiences in which their psychological needs are satisfied (i.e., OJC for Detachment, Relaxation, Autonomy, Mastery, Meaning, and Affiliation). For example, as shown by Hartig and colleagues (2014), spending time in nature can offer direct and indirect restoration from acute and chronic stress and recharge energy levels (*OJC for Relaxation*). Likewise, spending time in nature offers opportunities to experience autonomy by walking various routes outdoors (*OJC for Autonomy*), in turn replenishing depleting resources. Hence, I recommend future studies that explore whether nature can enable OJC for these six dimensions and, in turn, prevent the onset of (severe) burnout complaints.

Additionally, more research is needed on how to tackle the structural causes of burnout. In particular, future studies are suggested to focus on pathways understanding how to strengthen important resources in the workplace – autonomy, participation, and social support – while reducing work-related stressors. An interesting research area for burnout prevention would be to explore the potential of *combining* OJC interventions in nature with structural interventions in the workplace, such as reducing workload.

Implications for Practice

In the Netherlands and elsewhere in the world, outdoor therapies are becoming increasingly popular in tackling various mental health problems (Annerstedt & Währborg,

2011). The findings of my thesis support that outdoor therapy – to a certain extent – contributes to employees' burnout recovery process. Therefore, I recommend increasing the use and potential of outdoor therapy for employees with burnout. In particular, I explain why outdoor therapy should (if possible) be combined with interventions in the workplace. Finally, I explain why outdoor therapy can only be standardized to a certain extent and that the intervention should be tailored to the recovery process and goals of clients.

Combine Outdoor Therapy with Interventions in the Workplace

My thesis shows that changes in the workplace are of utmost importance for the burnout recovery process. In particular, strengthening important resources such as autonomy, participation, and social support, while reducing stressors like workload contributes to the reduction of burnout complaints and supports the RTW process. Therefore, my first recommendation is to combine outdoor therapy with tailored interventions in the workplace, which requires the active involvement of the employer and occupational doctor in the client's recovery process. However, this involvement is, as I have demonstrated, not always the case. Moreover, research shows that employers attribute the responsibility for employees' health and well-being to employees, while employees hold their employers responsible for their health (Van Berkel et al., 2014). Therefore, I suggest initiating a dialogue between clients, therapists, and employers or occupational doctors to discuss mutual expectations concerning the recovery process. This dialogue may enhance clients' feelings of control over the recovery process and boost social support from key workplace stakeholders, which are essential resources in the recovery process.

Tailor Outdoor Therapy to Clients' Recovery Goals

Although outdoor therapy is increasingly getting standardized using intervention protocols for certain clients and patient groups, my thesis shows that the burnout recovery process is inherently complex and that desired "outcomes" of "recovery" also differ among clients. For example, some clients are likely to start outdoor therapy when they are already in the second or third burnout recovery phase, whereas other clients just dropped out of work and are in the first burnout recovery phase. This means that outdoor therapy and the six intervention elements should be "tailored" to the specific recovery needs and goals of clients. For instance, for clients who are already in the second or third recovery phase, the emphasis may be on strengthening coping skills via experiential learning, whereas clients in the first recovery phase should be enabled to relax and recover from chronic stress through mindfulness and meditation exercises. So, yes, outdoor therapy can be standardized, focusing on the six intervention elements as identified in this thesis, but they should be used based on the recovery needs and goals of clients. Contrarily, the six interventions do not "always" have to be used, as

sometimes clients may strongly dislike certain exercises. Finally, since the meaning of recovery seems to differ among clients, I would consider it worthwhile for the therapist and their clients to discuss and define therapeutic goals.

Conclusions

The findings from the studies presented in Chapters 4-8 provide a rich understanding of the mechanisms preventing the onset of severe burnout complaints, the mechanisms underlying the burnout recovery process in general, and whether and how outdoor therapy supports that process.

Burnout Prevention

I conclude that employees who are still working and initiate and engage in crafting intended to satisfy psychological needs (i.e., OJC for Detachment, Relaxation, Autonomy, Mastery, Meaning, Affiliation) in their non-working time experience less burnout than employees who do not craft to satisfy those needs. In particular, employees who are able to detach from their work-related tasks and thoughts (*OJC for Detachment*), in addition to being closely and emotionally connected to others (*OJC for Affiliation*), seem to be able to prevent severe burnout complaints. Hence, OJC crafting in general, but in particular crafting for detachment and affiliation, seem to be promising mechanisms buffering against employee burnout.

Burnout Recovery

I conclude that when employees have developed a burnout and dropped out of work, their recovery runs through four phases – 1) *Facing the Crisis*, 2) *Addressing Root Causes*, 3) *Seizing and Realizing the Opportunity*, 4) *Staying at work* – in which various GRRs/SRRs are enhanced (**Figure 9.1**). Two overarching GRRs are receiving social support and experiencing a feeling of control over the recovery process. However, a partial or full RTW does not necessarily mean that employees are recovered from their burnout complaints. Burnout recovery entails an ongoing learning process in which employees learn to be aware of potential pitfalls that could trigger burnout symptoms while having confidence in their ability to prevent burnout from reoccurring.

The Value of Outdoor Therapy for Employee Burnout

I conclude that outdoor therapy comprises six intervention elements that may support the burnout recovery process (**Figure 9.2**). The intervention elements are: being more active in nature (*physical activity*), using nature to support the client/therapist relationship (*creating relationships*), having the client interact with nature (*observing nature interactions*), and doing mindfulness and meditation exercises in nature (*reconnecting body and mind*),

using natural elements for reflection (*nature metaphors*), and using natural elements for specific exercises (*experiential learning*). Depending on the context of the client, therapy, and therapist, these intervention elements may support the burnout recovery process, potentially yielding various direct and long-term outcomes.

Finally, I conclude that the intervention elements of *physical activity*, *creating relationships*, and *observing nature interaction* support the recovery process after burnout and enhance various direct and long-term outcomes (**Figure 9.3**). Depending on the context of the client and therapy, i.e., having a preference for intervention elements and using the elements or not, the intervention elements of *reconnecting body and mind*, *nature metaphors*, and *experiential learning* may support the burnout recovery process as well.

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Summary

Background

Burnout is a major societal issue that adversely affects employees' health and performance, which over time results in high sick leave costs for organizations. Contradictory to the knowledge of the predictors, correlates, and consequences of burnout, still very little is known about how employees successfully recover after burning out. Moreover, theoretically-grounded and evidence-based interventions for employees with burnout are rarely designed and studied. Simultaneously, the growing recognition of the importance of nature for our health and well-being has led to numerous scientific studies that provide evidence on a wide range of outcomes, including improvements in physical health, self-reported health, subjective well-being, and mental well-being. These health-promoting effects of nature are increasingly used to prevent and treat mental health problems, such as providing therapies outdoors in nature for employees with burnout. Although evidence of the effectiveness of outdoor therapy is slowly accumulating, theories explaining whether and how outdoor therapy may facilitate the burnout recovery process are often lacking.

Study Aim and Research Questions

The central aim of my thesis is to examine the value of outdoor therapy for the recovery process of employees with burnout. Given the salutogenic perspective of this thesis, I examined the mechanisms protecting against burnout and underlying the burnout recovery process (Research Phase 1; Research Questions 1-3) and whether and how outdoor therapy supports the burnout recovery process (Research Phase 2; Research Questions 4-5). Accordingly, I focus on the following research questions:

Burnout Prevention

- *Research question 1:* Which mechanisms in employees' non-working time protect employees against the development of burnout?

Burnout Recovery

- *Research question 2a*: How effective are existing combined (both person- and organization-directed) burnout interventions?
- *Research question 2b*: Which mechanisms influence the effectiveness of existing combined (both person- and organization-directed) burnout interventions?
- *Research question 3*: Which mechanisms explain a successful recovery after burnout?

The Value of Outdoor Therapy for Employee Burnout

- *Research question 4*: How and to what extent does outdoor therapy builds on the mechanisms underlying successful recovery after burnout?
- *Research question 5a*: What is the perceived impact of outdoor therapy on the recovery process of employees with burnout?
- *Research question 5b*: Which mechanisms explain the perceived impact of outdoor therapy on the recovery process of employees with burnout?

Methods

In this thesis, I adopted a mixed-methods design, with one longitudinal quantitative study, one systematic review, two qualitative studies, and one retrospective (both quantitative and qualitative) study, resulting in a rich understanding of burnout prevention, burnout recovery, and outdoor therapy for employee burnout. More precisely, I used multiple data collection methods to extract relevant data from various sources, including longitudinal questionnaires (RQ 1), a systematic literature study (RQ 2), in-depth interviews (RQ 3), semi-structured interviews, and content analysis (RQ 4), and a retrospective questionnaire and interviews (RQ 5). By employing mixed methods, I was able to assess the relation between outdoor therapy and the burnout recovery process quantitatively (focusing on outcomes) and qualitatively (focusing on which mechanisms explain this relation). I first used questionnaires among the working population and a systematic literature search, and in-depth interviews focusing on burned-out employees. This allowed me to *inductively* explore the mechanisms underlying burnout prevention and burnout recovery in general (Chapters 4-6), followed by *deductively* investigating the perceived impact and underlying mechanisms of outdoor therapy among former clients with burnout (Chapters 7 and 8)

Results

In **Chapter 4**, I present the findings of the longitudinal study focusing on the role of off-job crafting (OJC) for burnout prevention during the COVID-19 crisis, thereby enhancing insights into the mechanisms that protect against burnout (RQ 1). The study was based on a longitudinal research design, comprising one wave collected before the onset of the pandemic in March 2019 and one wave collected during the first lockdown of the crisis in April 2020 (total paired sample: N = 658). We showed that all six OJC dimensions (i.e., Detachment, Relaxation, Autonomy, Mastery, Meaning, Affiliation) and burnout correlated negatively cross-sectionally and longitudinally. Furthermore, employees who are able to "switch off" from their work-related thoughts (*OJC for*

Detachment) and experience being closely related to others (*OJC for Affiliation*) before the crisis reported reductions in burnout during the crisis.

In **Chapter 5**, I show the results from the systematic literature review, first focusing on the observed effects of nine included combined (both person- and organization-directed) interventions (RQ 2a). I found that the combined interventions led to greater improvement in exhaustion and cynicism in both the short term (after 4 months) and the long term (after 12 years) than in professional efficacy. In terms of promoting a return to work (RTW), the combined interventions showed long-term effects on the promotion of full RTW. I also found that a full or partial RTW does not mean that employees do not experience burnout complaints anymore. Overall, combined interventions seem more effective in reducing burnout complaints and supporting the RTW process than only using person- or organization-directed interventions. Concerning the mechanisms underlying the effectiveness of these interventions (RQ 2b), I found that enhancing employees' sense of job control (i.e., decision authority over their jobs), social support (e.g., positive feedback from supervisors), participation in decision-making (e.g., selecting stressors and mismatches) and reducing workload can facilitate the RTW process and reduce burnout complaints. However, the risk of bias in the included studies was considerably high, so the results of these studies have to be treated with caution.

In **Chapter 6**, focusing on nine employees who have recovered from their burnout, I inductively found that the recovery process comprises four phases (RQ 3). For each recovery phase, various Generalized Resistance Resources (GRRs) and Specific Resistance Resources (SRRs) are addressed:

1. Facing the Crisis (GRR: accepting the situation, SRR: label being sick, GRR: resting, SRR: financial security)
2. Addressing Root Causes (GRR: daily structure, GRR: physical activity, GRR: Nature, SRR: therapies/professionals, GRR: connectedness)
3. Seizing and Realizing the Opportunity (GRR: approval, GRR: reflecting, GRR: courage, SRR: openness)
4. Staying at Work: (SRR: meaningfulness, GRR: awareness, GRR: confidence)

Finally, essential overarching GRRs facilitating successful recovery after burnout included receiving social support from family, friends, and colleagues, as well as having a feeling of control over the recovery process.

In **Chapter 7**, I developed an intervention and evaluation model of outdoor therapy for employee burnout, thereby showing how outdoor therapy builds on the mechanisms underlying the burnout recovery process (RQ4). For doing so, I used qualitative data collected through semi-structured interviews with outdoor psychologists and former clients, a content analysis of the intervention protocol, and reflective meetings with

the intervention developers and health promotion experts. I identified six key outdoor intervention elements: 1) being more active in nature (*physical activity*); 2) doing mindfulness and meditation exercises in nature (*reconnecting body and mind*); 3) using natural elements as a mirror for reflection (*nature metaphors*); 4) using nature to support the relationship between client and therapist (*creating relationships*); 5) having the client interact with nature (*observing nature interactions*); and 6) using natural elements for specific exercises (*experiential learning*). I further showed that the implementation of these elements may facilitate the recovery process after burnout in which proximal (e.g., feeling at ease), intermediate (e.g., feeling of control), and distal outcomes (e.g., a stable RTW) emerge. This implementation process depends on the context of the therapist (e.g., number of clients per day), therapy (e.g., privacy issues), and the clients (e.g., affinity to nature).

In **Chapter 8,** I retrospectively focused on the perceived impact of outdoor therapy on the burnout recovery process among six former clients (RQ 5a). I found that all participants perceived outdoor therapy as very positive for their burnout recovery process in general. Concerning the perceived impact of outdoor therapy on the proximate outcomes, I found that all participants expressed having perceived a high impact on all of these outcomes, resulting in feeling relaxed and physically well, in addition to coming close to their own feelings. With regards to the perceived impact of outdoor therapy on the intermediate and distal outcomes, four participants scored high or very high, indicating that outdoor therapy had helped them to feel healthy and have fewer burnout complaints. However, two participants indicated that outdoor therapy had a low impact on various intermediate and distal outcomes, such as having a feeling of control over the recovery process, suggesting that outdoor therapy did not play a role in those outcomes. With regards to the mechanisms explaining the perceived impact of outdoor therapy (RQ 5b), my findings suggest that some interventions elements (i.e., *physical activity*, *creating relationships*, *observing nature interactions*) are yielding a bigger perceived impact than others (i.e., *reconnecting body and mind*, *nature metaphors*, *experiential learning*) – the latter depending on preferences for certain exercises and whether the therapists apply all intervention elements.

Conclusions and Recommendations

My thesis complements the existing body of knowledge concerning 1) burnout prevention, 2) burnout recovery, and 3) the value of outdoor therapy for employee burnout. *First*, enabling employees to switch off from their work-related thoughts and tasks, in addition to being closely and emotionally connected to others in their non-working time, are promising buffering mechanisms to prevent severe burnout complaints. *Second*, when employees do develop burnout, the recovery process entails four phases, all addressing

various GRRs/SRRs – strongly suggesting that pathways and meaning of recovery differ among employees. Most importantly, when employees experience a feeling of control over their recovery process and receive support from friends, family, professionals, employers, and occupational doctors, they are able to return to work in a stable and meaningful way. *Third*, outdoor therapy comprises six promising intervention elements that support – to a certain extent – the burnout recovery process. Likely dependent on the context of the clients, therapy, and therapist, some intervention elements (i.e., physical activity, creating relationships, observing nature interactions) yield a larger perceived impact on the burnout recovery process than others (i.e., reconnecting body and mind, nature metaphors, experiential learning). Besides outdoor therapy, interventions in the workplace to strengthen GRRs – autonomy, social support, participation – while reducing stressors are crucial too for the recovery process.

Recommendations for future studies are to build on my context-sensitive evaluation model to longitudinally examine the effects and mechanisms of outdoor therapy for employees with burnout, preferably employing both quantitative and qualitative methods. Additionally, since the outdoors can potentially be either a health-promoting or a resources-depleting setting for outdoor therapists, I would find it worthwhile to study whether working outdoors is indeed health-promoting for therapists. Finally, research should focus on how to increase the use of outdoor therapy in mainstream mental healthcare settings and how to tackle the structural causes of burnout.

Recommendations for practice are to combine outdoor therapy with interventions in the workplace by involving (if possible) the employer and occupational doctor in the recovery process. Finally, since the recovery process and meaning of recovery seem to differ among clients, it is important to tailor interventions to the specific recovery goals and needs of clients and not only focus on symptom reduction and the RTW as primary outcomes.

Samenvatting

Achtergrond

Burn-out is een belangrijk maatschappelijk fenomeen die de gezondheid en het functioneren van medewerkers negatief beïnvloedt. In de loop der tijd kan dit voor organisaties leiden tot hoge kosten door ziekteverzuim. We weten inmiddels veel over de voorspellende factoren en de consequenties van een burn-out. Daarentegen weten we nog steeds zeer weinig over hoe medewerkers met succes kunnen herstellen van een burn-out. Bovendien worden er zelden theoretisch onderbouwde interventies voor medewerkers met een burn-out ontwikkeld en onderzocht. Tegelijkertijd heeft de groeiende erkenning van de rol van de natuur voor onze gezondheid en ons welzijn geleid tot talrijke wetenschappelijke onderzoeken die bewijzen leveren over een breed scala aan resultaten, zoals verbeteringen qua fysieke gezondheid, zelfgerapporteerde gezondheid, subjectief welzijn en mentaal welzijn. Deze gezondheidsbevorderende effecten van de natuur worden steeds vaker gebruikt om psychische gezondheidsproblemen te voorkomen en te behandelen. Zo worden er behandelingen buiten in de natuur aangeboden voor medewerkers met een burn-out. Hoewel er langzaam maar zeker steeds meer bewijs komt voor de effectiviteit van therapie in de natuur, ontbreken er vaak theorieën die verklaren of en hoe buitentherapie het herstelproces bij een burn-out kan ondersteunen.

Doel van het onderzoek en de onderzoeksvragen

Het centrale doel van mijn proefschrift is het onderzoeken van de waarde van buitentherapie voor het herstelproces van medewerkers met een burn-out. Gezien het salutogene perspectief van dit proefschrift onderzocht ik de mechanismes die bescherming bieden tegen burn-out en die ten grondslag liggen aan het herstelproces bij een burn-out (Onderzoeksfase 1; Onderzoeksvragen 1-3) en of en hoe buitentherapie het herstelproces bij burn-out ondersteunt (Onderzoeksfase 2; Onderzoeksvragen 4-5). Daarom richt ik mij op de volgende onderzoeksvragen:

Burn-outpreventie

- *Onderzoeksvraag 1:* Welke mechanismes buiten werktijd beschermen medewerkers tegen het ontwikkelen van een burn-out?

Burn-outherstel

- *Onderzoeksvraag 2a*: Hoe effectief zijn bestaande gecombineerde burn-outinterventies (zowel persoons- als organisatiegericht)?
- *Onderzoeksvraag 2b*: Welke mechanismes beïnvloeden de effectiviteit van bestaande gecombineerde burn-outinterventies (zowel persoons- als organisatiegericht)?

- *Onderzoeksvraag 3:* Welke mechanismes verklaren een succesvol herstel na een burn-out?

De waarde van buitentherapie voor medewerkers met een burn-out

- *Onderzoeksvraag 4:* Hoe en in welke mate bouwt de buitentherapie voort op de mechanismes die een succesvol herstel na een burn-out ondersteunen?
- *Onderzoeksvraag 5a*: Wat is de ervaren impact van buitentherapie op het herstelproces van medewerkers met een burn-out?
- *Onderzoeksvraag 5b*: Welke mechanismes verklaren de ervaren impact van buitentherapie op het herstelproces van medewerkers met een burn-out?

Methodes

In dit proefschrift heb ik een ontwerp met een combinatie van methodes toegepast. Dit bestond uit een longitudinaal kwantitatief onderzoek, een systematische evaluatie, twee kwalitatieve onderzoeken en een retrospectief onderzoek (zowel kwantitatief als kwalitatief). Dit heeft geresulteerd in een breed inzicht in burn-outpreventie, burn-outherstel en buitentherapie voor het behandelen van een burn-out bij medewerkers. Ik heb meerdere methodes gebruikt waaronder longitudinale vragenlijsten (OV 1), een systematische literatuurstudie (OV 2), diepgaande interviews (OV 3), semigestructureerde interviews en inhoudsanalyses (OV 4), en een retrospectieve vragenlijst en interviews (OV 5). Door het gebruik van verschillende methodes was ik in staat de relatie tussen buitentherapie en het burn-outherstelproces kwantitatief en kwalitatief te onderzoeken. Daardoor kon ik op *inductieve* wijze de mechanismes onderzoeken die ten grondslag liggen aan burn-outpreventie en burn-outherstel in het algemeen (hoofdstuk 4-6), gevolgd door een *deductief* onderzoek naar de ervaren impact en onderliggende mechanismes van buitentherapie bij voormalige cliënten met een burn-out (hoofdstuk 7 en 8)

Resultaten

In **hoofdstuk 4** presenteer ik de bevindingen van het longitudinale onderzoek waarbij is gekeken naar de rol van off-job crafting (OJC) bij burn-outpreventie tijdens de coronacrisis. Hiermee wordt een beter inzicht verkregen in de mechanismes die bescherming bieden tegen burn-out (OV 1). Het onderzoek was gebaseerd op een longitudinaal onderzoeksontwerp, waarbij is gekeken naar één reeks gegevens die werden verzameld vóór het begin van de pandemie in maart 2019, en één reeks die werd verzameld tijdens de eerste lockdown in april 2020 (totaal paired sample: n=658). We

hebben laten zien dat er tussen alle zes OJC-dimensies (d.w.z. loslaten, ontspanning, autonomie, beheersing, zingeving, relatie) en burn-out een negatieve cross-sectionele en longitudinale correlatie kon worden aangetoond. Bovendien melden medewerkers die in staat zijn om hun werkgerelateerde gedachten 'uit te schakelen' (*OJC voor loslaten*) en een nauwe band met anderen hadden (*OJC voor relatie*) vóór de coronacrisis, tijdens de crisis een vermindering van hun burn-outklachten.

In **hoofdstuk 5** laat ik de resultaten zien van het systematische literatuuronderzoek. Hierbij heb ik me eerst gericht op de ervaren effecten van de negen gecombineerde (zowel persoons- als organisatiegerichte) interventies die ik heb bestudeerd (OV 2a). Ik ontdekte dat de gecombineerde interventies hebben geleid tot grotere verbeteringen op het gebied van uitputting en cynisme op zowel de korte termijn (na 4 maanden) als de lange termijn (na 12 jaar), dan voor wat betreft verbetering van de professionele effectiviteit. Voor wat betreft het bevorderen van een terugkeer naar het werk (re-integratie), vertoonden de gecombineerde interventies effecten op de lange termijn als het gaat om volledige re-integratie. Ik ontdekte tevens dat een volledige of gedeeltelijke re-integratie niet betekent dat medewerkers geen burn-outklachten meer ervaren. Over het algemeen lijken gecombineerde interventies effectiever voor het verminderen van burn-outklachten en het ondersteunen van het re-integratieproces dan alleen het gebruik van persoonsgerichte of organisatiegerichte interventies. Wat betreft de mechanismes die ten grondslag liggen aan de effectiviteit van deze interventies (OV 2b) heb ik ontdekt dat het re-integratieproces kan worden ondersteund en de burn-outklachten kunnen worden verminderd wanneer medewerkers meer controle krijgen (met andere woorden: hun beslissingsbevoegdheid over hun werk), meer sociale steun ervaren (bijvoorbeeld positieve feedback van leidinggevenden), meer kunnen participeren in de besluitvorming (bijvoorbeeld het kiezen van stressfactoren en aangeven als er geen sprake was van een goede match) en de werkdruk wordt verminderd. Het risico van bias in de opgenomen onderzoeken was echter aanzienlijk, dus de resultaten van deze onderzoeken moeten met enige voorzichtigheid worden gebruikt.

In **hoofdstuk 6**, waarin ik me heb gericht op negen medewerkers die zijn hersteld van hun burn-out, ontdekte ik inductief dat het herstelproces vier fasen omvat (OV 3). Voor elke herstelfase staan verschillende generalized resistance resources (GRR's, algemene weerstandsbronnen) en specific resistance resources (SRR's, specifieke weerstandsbronnen) centraal:

1. De crisis aanpakken (GRR: de situatie accepteren, SRR: het etiket 'ziek zijn', GRR: rusten, SRR: financiële zekerheid)
2. Het aanpakken van hoofdoorzaken (GRR: dagstructuur, GRR: lichamelijke activiteiten, GRR: natuur, SRR: behandelingen/deskundigen, GRR: verbondenheid)

3. Kansen grijpen en realiseren (GRR: goedkeuring, GRR: reflecteren, GRR: moed, SRR: openheid)
4. Aan het werk blijven: (SRR: zingeving, GRR: bewustzijn, GRR: zelfvertrouwen)

Tot de essentiële overkoepelende GRR's die succesvol herstel na burn-out bevorderen behoren ook het ontvangen van sociale steun van familie, vrienden en collega's, en het gevoel van controle over het herstelproces.

In **hoofdstuk 7** heb ik een interventie- en evaluatiemodel ontwikkeld voor buitentherapie bij burn-out, waarbij ik heb aangetoond hoe buitentherapie voortbouwt op de mechanismes die ten grondslag liggen aan het burn-outherstelproces (OV 4). Daarvoor heb ik kwalitatieve gegevens gebruikt die zijn verzameld via semigestructureerde interviews met 'buitenpsychologen' en voormalige cliënten, een inhoudelijke analyse van het interventieprotocol, en reflectiegesprekken met interventie-ontwikkelaars en deskundigen op het gebied van gezondheidsbevordering. Ik heb hierin zes belangrijke elementen voor buitentherapie geïdentificeerd: 1) actief zijn in de natuur (*lichamelijke activiteit*); 2) mindfulness- en meditatieoefeningen doen in de natuur (*lichaam en geest weer met elkaar verbinden*); 3) natuurlijke elementen gebruiken als spiegel voor reflectie (*natuurmetaforen*); 4) de natuur gebruiken om de relatie tussen cliënt en behandelaar te ondersteunen (*relaties aangaan*); 5) de cliënt interactie te laten ondergaan met de natuur (*natuurinteracties observeren*); en 6) natuurlijke elementen voor specifieke oefeningen gebruiken (*ervaringsleren*). Verder heb ik laten zien dat de implementatie van deze elementen na een burn-out het herstelproces kan faciliteren, waarbij proximale (bijvoorbeeld zich op zijn gemak voelen), tussenliggende (bijvoorbeeld een gevoel van controle) en distale uitkomsten (bijvoorbeeld een stabiele re-integratie) zich kunnen ontwikkelen. Dit implementatieproces is afhankelijk van de context van de therapeut (zoals het aantal cliënten per dag), de therapie (zoals privacyvraagstukken) en de cliënten (zoals de affiniteit met de natuur).

In **hoofdstuk 8** heb ik me retrospectief gericht op de ervaren impact van buitentherapie op het burn-outherstelproces bij zes voormalige cliënten (OV 5a). Ik kwam erachter alle deelnemers de buitentherapie over het algemeen als zeer positief voor hun burn-outherstelproces hadden ervaren. Wat betreft de ervaren impact van buitentherapie op de proximale uitkomsten gaven alle deelnemers aan dat er sprake was van een grote impact, resulterend in een ontspannen gevoel en lichamelijk welzijn, naast dat ze in staat waren dicht bij hun eigen gevoelens te komen. Met betrekking tot de ervaren impact van buitentherapie op de tussenliggende en distale resultaten scoorden vier deelnemers hoog of zeer hoog, wat erop wijst dat de buitentherapie hen had geholpen om zich gezond te voelen en minder burn-outklachten te hebben. Twee deelnemers gaven echter aan dat buitentherapie weinig invloed had op diverse tussenliggende en distale resultaten, zoals het gevoel van controle over het herstelproces, wat suggereerde dat buitentherapie geen rol speelde in deze resultaten. Met betrekking tot de mechanismes die de ervaren impact

van buitentherapie verklaren (OV 5b) suggereren mijn bevindingen dat sommige interventie-elementen (te weten: *fysieke activiteit*, *het aangaan van relaties*, *het observeren van natuurinteracties*) een grotere ervaren impact opleveren dan andere elementen (te weten: *het opnieuw verbinden van lichaam en geest*, *natuurmetaforen*, *ervaringsleren*). Voor deze tweede groep werd de ervaren impact bepaald door de voorkeuren voor sommige oefeningen en gebruikten de therapeuten niet altijd alle interventie-elementen.

Conclusies en aanbevelingen

Mijn proefschrift is een aanvulling op de bestaande kennis over 1) burn-outpreventie, 2) burn-outherstel en 3) de waarde van buitentherapie bij een burn-out. *Ten eerste* concludeer ik dat medewerkers helpen om zich af te sluiten van werkgerelateerde gedachten en taken, naast dat zij nauw en emotioneel verbonden zijn met anderen buiten werktijd, veelbelovende buffermechanismes zijn om ernstige burn-outklachten te voorkomen. *Ten tweede*, wanneer medewerkers wel een burn-out ontwikkelen, bestaat het herstelproces uit vier fasen, waarbij telkens verschillende GRR's/SRR's worden gebruikt. Dit lijkt er sterk op te wijzen dat de wegen naar herstel, en de betekenis van herstel, per persoon verschillen. Het belangrijkste is dat wanneer medewerkers controle ervaren over hun herstelproces en steun krijgen van vrienden, familie, professionals, werkgevers en bedrijfsartsen op het werk, ze op een stabiele en zinvolle manier weer aan de slag kunnen. *Ten derde*, buitentherapie bestaat uit zes veelbelovende interventie-elementen die (tot op zekere hoogte) het burn-outherstelproces ondersteunen. Waarschijnlijk afhankelijk van de context van de cliënten, behandeling en therapeut leveren sommige interventie-elementen (zoals lichamelijke activiteit, het aangaan van relaties, het observeren van natuurinteracties) een grotere ervaren impact op het burn-outherstelproces op dan andere elementen (zoals het opnieuw verbinden van lichaam en geest, natuurmetaforen, ervaringsleren). Naast buitentherapie zijn interventies op de werkplek om GRR's te versterken (autonomie, sociale ondersteuning, participatie) en het verminderen van stressoren ook cruciaal voor het herstelproces.

Aanbevelingen voor toekomstige onderzoeken zijn voortbouwen op mijn contextgevoelige evaluatiemodel om longitudinaal de effecten en mechanismes van buitentherapie te onderzoeken voor medewerkers met een burn-out, bij voorkeur met zowel kwantitatieve als kwalitatieve methodes. Omdat het in de buitenlucht zijn mogelijk zowel gezondheidsbevorderend als uitputtend zou kunnen werken voor therapeuten, zou ik het bovendien de moeite waard vinden om te onderzoeken of het werken in de buitenlucht ook daadwerkelijk gezondheidsbevorderend is voor de therapeuten. Tot slot moet verder onderzoek zich richten op de vraag hoe het gebruik van buitentherapie in de reguliere geestelijke gezondheidszorg kan worden uitgebreid en hoe de structurele oorzaken van een burn-out kunnen worden aangepakt.

Aanbevelingen voor de praktijk zijn om buitentherapie te combineren met interventies op de werkplek door (indien mogelijk) de werkgever en de bedrijfsarts bij het herstelproces te betrekken. Ten slotte is het, omdat het herstelproces en de betekenis van herstel per cliënt lijken te verschillen, belangrijk om interventies af te stemmen op de specifieke hersteldoelen en behoeften van de cliënt, en niet alleen te focussen op symptoomvermindering en re-integratie als primaire resultaten.

Appendices

Chapter 8

Interview Guide

Goedmorgen/middag.
Wat fijn dat je meedoet aan dit interview. Ik ben Roald Pijpker van de Wageningen Universiteit en doe een studie naar de effecten, zowel positief als negatief, van natuurtherapie op het herstelproces na een burn-out.
Ik zou graag willen weten of natuurtherapie jou geholpen heeft om te herstellen na je burn-out, en zo ja, welke factoren daarbij geholpen hebben of juist in de weg stonden.
Er zijn geen goede of foute antwoorden.
Je hebt aangegeven dat je aan deze studie mee wilt doen, maar als je toch wilt stoppen kun je dat altijd zeggen. Als je het interview wilt onderbreken, wat wilt vragen of een pauze wilt, kun je dit ook altijd aangeven.
Ik zal een opname maken van het interview, maar die is alleen voor ons bedoeld om het interview zo goed mogelijk te kunnen uitwerken. Alles wat we bespreken zal anoniem blijven en jouw naam of andere gegevens zullen nergens komen te staan.
Wil je nog steeds meedoen met het interview?
En heb je vragen voordat we het interview starten?
Dan start ik nu de audio-opname en gaan we beginnen.

Start interview
o Zou je willen beginnen met jezelf voor te stellen
1. Leeftijd
2. Duur ziekteverzuim (vorige, huidige baan)
3. Privé (partner, kinderen, etc.)
o Waarom heb je voor natuurtherapie gekozen?
1. Deelname eerdere/andere rehabilitatie programma's
2. Volledig buiten (of combi buiten en binnen)
Impact Natuurtherapie op uitkomsten (alle elementen samen)
o Ik zou het nu graag met je willen hebben over de algehele impact van natuurtherapie op het herstelproces na je burn-out (zowel positief als negatief).
1. kun je in je eigen woorden omschrijven hoe je natuurtherapie hebt ervaren? • Eventueel doorvragen: Hoe heb je de impact ervaren m.b.t.:
o Je fysieke welzijn
o Bij je gevoel kunnen komen ('uit je hoofd')
o Kunnen ontspannen
o Succeservaringen in het herstelproces
o Gevoel van controle ervaren over het herstelproces
o Mentaal welzijn
o De natuur als alledaagse hulpbron
o Afname van burn-outklachten

o Re-integratie
o Zingeving op het werk
o Vertrouwen in de toekomst
o Gezondheid / kwaliteit van leven
Impact Zes Elementen Natuurtherapie (positief)
o Uit onze vorige deelstudie hebben we zes elementen van natuurtherapie in kaart gebracht, namelijk: fysieke activiteit; herstellen van lichaam en geest; natuurmetaforen; gelijkwaardigheid; cliënt-natuurinteracties; en ervarend leren (zie kaarten). We hebben het zojuist gehad over de impact van natuurtherapie op het herstelproces van je burn-out in het algemeen. Ik zou het nu graag met je willen hebben over welke elementen specifiek hebben bijgedragen aan het herstelproces.
1. Bekijk de zes kaarten die allemaal een element van natuurtherapie weergeven. Welk(e) element(en) springen er voor jou eruit?
o Hoe zou je dit element zelf omschrijven?
o Waarom?
o Wat ervoer je?
o Wat merkte je (fysiek, mentaal, emotioneel, cognitief)?
o Type natuur?
2. Zou je kunnen reflecteren op de overige elementen.
o Hoe zou je dit element zelf omschrijven?
o Waarom?
o Wat gebeurde er precies?
o Wat ervoer je?
o Wat merkte je (fysiek, mentaal, emotioneel, cognitief)?
o Type natuur?
o Welke niet?
3. Zou je kunnen aangeven wanneer de elementen werden ingezet?
o Aan het begin van het behandelplan; hoe heeft je dat geholpen?
o Halverwege het behandelplan; hoe heeft je dat geholpen?
o Aan het eind van het behandelplan; hoe heeft je dat geholpen?
o Type
4. Wat voor type natuur heb je als positief ervaren voor je herstel proces?
o In de wijk (geen groen)
o Park
o Bos
o Strand
o Duinen
o Heide
o Meer
. Wat voor type seizoen heb je als positief ervaren voor je herstel proces?

o Herfst, winter, lente, zomer
Impact Natuurtherapie (negatief)
o We hebben nu gehad over de positieve impact van natuurtherapie op het herstelproces na je burn-out. Ik ben nu heel benieuwd wat juist niet heeft gewerkt in de therapie.
1. Op welke manier heeft natuurtherapie niet/negatief gewerkt voor het herstelproces na je burn-out, maar was het wel de bedoeling?
2. Relatie negatieve ervaringen met de zes elementen?
o De zes kaarten o Zijn er kaart(en) die je niet kunt koppelen aan je ervaringen?
3. Waar liep je nog meer tegen aan tijdens natuurtherapie?
o Privacy
o Veiligheid
o Weer
o Tekenbeet, eikenprogressierups
o Onverwachte gebeurtenissen
o Reizen
o Etc.
Wat voor type natuur heb je als negatie ervaren voor je herstel proces?
o In de wijk (geen groen)
o Park
o Bos
o Strand
o Duinen
o Heide
o Meer
. Wat voor type seizoen heb je als negatief ervaren voor je herstel proces?
o Herfst, winter, lente, zomer
Impact andere factoren (= context)
o Er zijn waarschijnlijk nog meer factoren/gebeurtenissen, naast de natuurtherapiesessies zelf, die een positieve/negatieve invloed hebben gehad op het herstelproces na je burn-out.
1. Kun je wat vertellen over je privésituatie in relatie tot je herstelproces?
o Positief (voorbeelden)
o Negatief (Voorbeelden)
o Sporten of andere hobby's, manieren om te ontspannen
o Deelname andere rehabilitatieprogramma's
2. Kun je wat vertellen over de rol van de natuur voor je herstel buiten de therapiesessies?
o (Bestaande met de natuur
3. Kun je wat vertellen over je werksituatie in relatie tot je herstelproces?
o Positief (voorbeelden)

o Negatief (Voorbeelden
o Steun (nieuwe) werkgever
o Steun bedrijfsarts
4. Andere belangrijke gebeurtenissen/factoren?
o Positief (voorbeelden)
o Negatief (Voorbeelden

Einde interview
We zijn bij het einde van het interview gekomen.
Wil je nog iets vertellen wat we nog niet besproken hebben?
Heb je nog vragen?
Hartelijk dank voor je tijd en je medewerking. Als je op een later moment toch nog vragen hebt, kun je altijd contact met mij opnemen.

Intervention Elements Cards

List of abbreviations

BAT: Burnout Assessment Tool
BRM: Burnout Recovery Model
CCT: Controlled Clinical Trial
CDS II: Causal Dimension Scale
COPSOQ II: Copenhagen Psychosocial Questionnaire II
CPO : Context, Processes, Outcomes
CY: Cynicism
DP: Depersonalization
EX: Exhaustion
GRRs: Generalized Resistance Resources
KIWEST: Knowledge Intensive Working Environment Survey Target
MANOVA: Multivariate Analysis of Variance
MBI: Maslach Burnout Inventory
MBI–GS: Maslach Burnout Inventory–General Survey
MBI–HSS: Maslach Burnout Inventory–Human Services Survey
MBI–NL: Maslach Burnout Inventory–Netherlands
RTW: Return to Work
PA: Personal Accomplishment
PE: Professional Efficacy
PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PROSPERO: International Prospective Register of Systematic Reviews
SOC: Sense of Coherence
SSR: Specific Resistance Resources

Acknowledgements

With great enthusiasm and motivation, I started my PhD project Employee Burnout: Prevention, Recovery and Outdoor Therapy in 2018. Now, four years later, the end result lies here. I am grateful to many people for making this project a success.

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About the Author

Roald Pijpker was born on 22 June 1991 in Hoogeveen, the Netherlands. He spent most of his childhood in Beilen, where he graduated from the Christelijke Scholengemeenschap Beilen in 2009. He then moved to Heerenveen to start with the MBO program ("post-secondary vocational education") Sport and Exercises at Friesland College, from which he graduated in 2012. He then moved to Nijmegen to take the Bachelor of Applied Sciences program, entitled Sports, Health and Management at Hogeschool van Arnhem en Nijmegen, from which he graduated in 2015. In 2017, he graduated with a Master of Communication, Health, and Life Sciences at Wageningen University.

The master's program at Wageningen University sparked Roald's interest in doing research. He applied for a PhD position at the chair group Health and Society in 2018 and started his PhD journey in June of the same year. The PhD project focused on burnout prevention, recovery, and the value of outdoor therapy for employee burnout from a salutogenic perspective. Besides the PhD project, Roald invested a vast amount of time in (co)leading four other research projects, assisted in bachelor and master courses, supervised students in writing their thesis, wrote scientific and professional articles, participated in national and international conferences, and visited the Center of Salutogenesis in Zurich for a research visit entailing 3.5 months. Roald currently works as a Programme Officer for the cluster Elderly at ZonMw in The Hague.

List of Publications

(Published and forthcoming)

International Scientific Journals

- Pijpker, R., Bauer, G.F., Veen, E.J., Koelen, M., & Vaandrager, L. (2022). An impact and process evaluation of outdoor therapy for employees with burnout. Evaluation and Program Planning. [under review].
- Pijpker, R., van der Kamp, D., Vader, S., den Broeder, L., & Wagemakers, A. (2022). Socioeconomic status and mental health during the COVID-19 crisis: Are sense of coherence, sense of community coherence and sense of national coherence predictors for mental health? Health Psychology Report, 10(2), 149–155. https://doi.org/10.5114/hpr.2022.114527
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- Pijpker, R., Kerksieck, P., Tušl, M., De Bloom, J., Brauchli, R., & Bauer, G. F. (2022). The role of off-job crafting in burnout prevention during COVID-19 crisis: a longitudinal study. International Journal of Environmental Research and Public Health, 19(4), [2146]. https://doi.org/10.3390/ijerph19042146
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- Super, S., Pijpker, R., & Polhuis, K. (2021). The relationship between individual, social and national coping resources and mental health during the COVID-19 pandemic in the Netherlands. Health Psychology Report, 9(2), 186-192. https://doi.org/10.5114/hpr.2020.99028
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- Pijpker, R., Vaandrager, L., Veen, E. J., & Koelen, M. A. (2019). Combined interventions to reduce burnout complaints and promote return to work: a systematic review of effectiveness and mediators of change. International Journal of Environmental Research and Public Health, 17, [55]. https://doi.org/10.3390/ijerph17010055
- Pijpker, R., Vaandrager, L., Veen, E. J., & Koelen, M. A. (2019). A salutogenic approach to understanding the potential of green programs for the rehabilitation

of young employees with burnout: protocol for a mixed method study on effectiveness and effective elements. JMIR Research Protocols, 8(10), [e15303]. https://doi.org/10.2196/15303

- Pijpker, R., Vaandrager, L., Bakker, E. J., & Koelen, M. (2018). Unravelling salutogenic mechanisms in the workplace: the role of learning. Gaceta Sanitaria, 32(3), 275-282. https://doi.org/10.1016/j.gaceta.2017.11.006
- Mana, A., Grossi-Milani, R., Dolphine Fuentes Penachiotti, F., Hardy, L. J., Juvinyà Canal, D., Benheim, S., Pijpker, R., Polhuis, K., Neuman, M., Hakimian, M., & Sagy, S. (2021). Salutogenesis in the time of COVID-19: what coping resources enable people to face the crisis and stay well? International and longitudinal study. Academia Letters, [4322]. https://doi.org/10.20935/AL4322

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- Pijpker, R., Openneer, E., Veen, E., Koelen, M., & Vaandrager, L. (2022). Zorginterventies in de natuur voor werknemers met een burn-out: naar een evaluatiemodel van mogelijke werkzame elementen. Participatie en Herstel, 1, 1-11.
- Veen, E. J., & Pijpker, R. (2021). Plezier in leren. Onze Jeugd, 7(2), 16.

Book Chapter

- Pijpker, R., Peeters, P., Veen, E. J., & Vaandrager, L. (2021). Green mental health en herstel. In J. Maas, R. Visscher, & K. Westen (Eds.), Green Mental Health (pp. 93-110). Uitgeverij Boom.

Scientific Reports

- Pijpker, R., & Veen, E. (2020). De onderwijs-zorgboerderij: een kansrijk traject om uitgevallen leerlingen terug naar school te begeleiden. (Rapport / Wageningen University & Research Wetenschapswinkel; No. 365). Wageningen University & Research, Wetenschapswinkel. https://doi.org/10.18174/529742
- Veen, E., & Pijpker, R. (2020). Ontwikkeling en professionalisering van onderwijs op de boerderij: leerarrangementen in het groen. (Rapport / Wageningen University & Research Wetenschapswinkel; No. 363). Wageningen University & Research, Wetenschapswinkel. https://doi.org/10.18174/529704
- Pijpker, R., Polhuis, C. M. M., & Super, S. (2020). Factsheet: Individuele, sociale en nationale hulpbronnen en de mentale gezondheid van Nederlanders tijdens de corona crisis. Wageningen University & Research. https://edepot.wur.nl/528584

Conference Abstracts

- Pijpker, R., Veen, E. J., Koelen, M. A., Vaandrager, L., & Bauer, G.F. (2021). Developing an intervention logical model for outdoor therapy of employee burnout: salutogenic-based, participatory approach (in the Netherlands). Abstract from International Conference on Salutogenesis: advancing salutogenesis towards thriving societies. June 17-18 2021.
- Pijpker, R., Vaandrager, L., Veen, E. J., & Koelen, M. A. (2019). The potential of green rehabilitation for young employees with burnout: a salutogenic approach. Abstract from First Annual International Conference, Congress and Celebration, Northern California, United States. https://www.forestbathinginternational.org/presentations/a-salutogenic-approach-the-potential-of-green-programmes-for-the-rehabilitation-of-young-employees-with-burnout
- Pijpker, R., & Vaandrager, L. (2017). Resources creating health for people with an intellectual disability. Abstract from Bridging the gap: from evidence to improved health for persons with intellectual and developmental disabilities, Belfast, United Kingdom. https://edepot.wur.nl/420483
- Pijpker, R., Vaandrager, L., & Koelen, M. A. (2017). Salutogenesis in the workplace: the role of generalized resistance resources, sense of coherence, and learning. In 21st Annual Health Promotion Conference: Promoting Health and Wellbeing in the Workplace: National University of Ireland Galway, June 15th 2017 (pp. 42-42)

News Items

- Pijpker, R. (2021). Burnout, what then? Resource, 15(19), 12-14. https://edepot.wur.nl/549020
- Promotieonderzoek naar herstel van burn-out (2021). De Buitenpsychologen. Media Coverage: https://www.debuitenpsychologen.nl/media/promotieonderzoek-naar-herstel-van-burn-out/
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- Veen, E. J., & Pijpker, R. (2020). Belangrijke rol van onderwijszorgboerderijen in opvang van leerlingen. Groen Kennisnet. https://www.groenkennisnet.nl/nl/groenkennisnet/show/Belangrijke-rol-van-onderwijs-zorgboerderijen-in-opvang-van-leerlingen.htm

Training and Supervision Plan

Roald Martijn Pijpker
Wageningen School of Social Sciences (WASS)
Completed Training and Supervision Plan

Name of the learning activity	Department/Institute	Year	ECTS*
A) Project related competences			
A1 Managing a research project			
WASS Introduction Course	Wageningen School of Social Sciences	2018	1
Writing WASS research proposal	Wageningen School of Social Sciences	2018	6
Research internship	Center of Salutogenesis, University of Zurich	2020	6
'The potential of green rehabilitation for young employees with burnout: a salutogenic approach'	First Annual International Conference, Congress and Celebration, San Francisco	2019	1
'Developing an intervention logical model for outdoor therapy of employee burnout: salutogenic-based, participatory approach (in the Netherlands)'	Wageningen School of Social Sciences PhD Day, Wageningen	2021	1
'Developing an intervention logical model for outdoor therapy of employee burnout: salutogenic-based, participatory approach (in the Netherlands)'	International Conference on Salutogenesis: advancing salutogenesis towards thriving societies, Girona (online)	2021	1
A2 Integrating research in the corresponding discipline			
Systematic approaches to reviewing literature	Wageningen School of Social Sciences	2018	4
Advanced Qualitative Research Design and Data Collection Methods, GEO 56806	Wageningen University	2019	4
Quantitative Data Analysis: Multivariate Techniques, YRM 50806	Wageningen University	2019	6
B) General research related competences			
B1 Placing research in a broader scientific context			
Philosophy of Social Science	Wageningen School of Social Sciences	2019	3
Institutions and Societal Transformation, CPT 57802	Wageningen School of Social Sciences	2019	2
Co-project leader of 'Ontwikkeling en professionalisering van onderwijs op de boerderij: leerarrangementen in het groen'	WUR Science Shop (HSO & RSO)	2019-2020	4
B2 Placing research in a societal context			
Organizing kick-off event for PhD Project	Centre for Space, Place and Society	2018	1
Resource Interview *'Burnout, what then?'*	WUR	2022	1
C) Career related competences/personal development			
C1 Employing transferable skills in different domains/careers			
Teaching/supervision	WUR	2018-2022	4
Total			**45**

*One credit according to ECTS is on average equivalent to 28 hours of study load

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