

Portfolio Volume 1: Major Research Project

**Experiences of Change in Connectedness Through Forest Bathing Among Adults with Disabilities  
and/or Physical Health Difficulties**

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*In memory of my grandmother Janina, who instilled in me a deep love for the great outdoors.*

*I still feel your comforting presence in the trees.*

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### **Abstract**

Nature exposure and forest bathing have been shown to benefit health, well-being, and connectedness on individual, societal, and environmental levels. However, they are rarely made accessible for people with disabilities, who often face disproportionate exclusion and discrimination in society. There is also little research assessing the forest bathing experiences of this population and in-depth qualitative exploration of connectedness through forest bathing. This research aimed to explore adults with disabilities' experiences of change in their sense of connectedness to the self, others, and nature through accessible forest bathing programs. Semi-structured qualitative interviews were conducted with fifteen adults who identified as having physical disabilities and/or physical health difficulties after attending at least two online and/or in-person accessible forest bathing group sessions. The programs were delivered collaboratively by facilitators and participants with disabilities, fostering peer support. Four themes were generated using Reflexive Thematic Analysis: 'The ground: Establishing a secure base', 'The trunk: Cultivating a strong sense of self and inner peace', 'The branches: Opening up to the world', and 'The leaves: Giving back – preserving the earth and all living beings'. The findings indicate that accessible forest bathing programs fostered an increased sense of connectedness to the self, others, and nature, as well as a universal interconnectedness and spirituality among people with disabilities. Connectedness was seen as essential in community building, cultivating a sense of belonging, reducing isolation, fostering self-identity, personal growth, and environmental stewardship. The study advocates for integrating accessible forest bathing programs into clinical practices, green social prescribing, and education curricula to improve psycho-eco-social well-being and promote a more inclusive and environmentally conscious society.



## **Chapter One: Introduction**

### **Chapter Overview**

This chapter establishes the foundation for the study, exploring people with disabilities' (PWDs) experiences of change in connectedness through forest bathing (FB). It will outline my epistemological lens, relationship to the research and my approach to reflexivity, introduce key terminology used in this study, and provide an overview of empirical and theoretical literature, policy documents, psychological theory, and models related to the topic. This chapter concludes with a rationale for the systematic literature review (SLR).

### **Personal and Epistemological Position**

#### ***Epistemology***

Epistemology explores the nature, scope, and acquisition of knowledge, while ontology examines the nature of being and the structures of reality (Crotty, 2003; Scotland, 2012). The researcher's epistemological stance reflects their underlying beliefs about knowledge production and its relation to reality. Understanding the philosophical underpinnings of a study helps to determine how the research is conceptualised and conducted in the pursuit of knowledge (Carter & Little, 2007).

I have approached this study from a critical realist (CR) stance (Bhaskar, 2016). CR serves as a middle ground between realism and relativism. From the realist perspective, definitive truths (i.e., realities) exist in the world, and research data mirrors reality directly. In contrast, the relativist view argues that truths are constructed, leading to various possible interpretations of the same data (Edwards et al., 2014). CR supports the realist ontology that an objective physical reality exists independently from individual perception. However, simultaneously, it claims a subjective epistemology—a socially constructed subjective interpretation, experience, and beliefs about this observed objective reality coexist (Fletcher, 2017; Taylor, 2018).

I see nature and people's physical impairments as material realities. However, I am also acknowledging and exploring how deeply internalised and socially constructed views about these realities might shape people's experiences. Hence, just as participants' ideologies and principles may affect their experiences of connectedness through FB, my own experiences, ideologies, and principles influence how I conduct and understand research.

### ***Positionality***

Positionality concerns a researcher's stance in a particular study (Savin-Baden & Major, 2023). It requires intentional reflection about their identities to enable evaluation of the effect of their traits and viewpoints in relation to the study's population, research topic, and process.

My positionality has influenced the approach of this research. Being a young, white, middle-class female with no disabilities places me within certain privileges, possible ignorance, and a lack of understanding of the lived experiences of my research population. This renders me an 'outsider' researcher who is not part of the community or group that the participants are from (Braun & Clarke, 2013).

However, I grew up with my grandad, who has lived with multiple life-long physical impairments and chronic pain. I am aware of the challenges this brings from an outsider's perspective. Professionally, I also had experience working with individuals facing diverse physical and mental health impairments and listening to their stories has revealed that the main difficulties often stem not from health conditions themselves but from societal discrimination.

Simultaneously, I hold the identity of a Lithuanian-Eastern European, raised in a lower-class family in a post-Soviet occupied country within the context of the current Soviet repressions of Ukraine, and someone who is an immigrant in the United Kingdom (UK). This influences the cultural expectations and narratives I hold of systemic oppression based on someone's identity. These

identities have shaped my interactions and perceptions of my research participants and their experiences and how they have perceived me and communicated to me in return.

Despite no prior formal experience with FB, growing up in Lithuania, Europe's last pagan nation with 30% forest cover, I developed a deep connection to nature. This immersion from childhood has shaped my perspectives and expectations regarding FB and influenced my interpretation of the research data.

### ***Reflexivity***

Reflexivity involves critical reflection wherein the researcher addresses the influences of their identity and positionality on the research process and outcome by clearly articulating their assumptions and devising methods to consider them (Lazard & McAvoy, 2017). Researchers must introspect on their research methodologies and communicate to audiences how they navigated the research process to arrive at specific conclusions, aiming to create a more credible and transparent depiction of their findings (Corlett & Mavin, 2018). This is not to eliminate problematic subjective misinterpretation of data to find the correct objective results that align with the positivist paradigm (Varpio et al., 2021). Instead, it is valuing the researcher's subjectivity as a vital tool for investigation and recognising that the researcher actively influences the research (Braun & Clarke, 2022a) and co-constructs knowledge with participants (Finlay, 2002). Thus, instead of attempting to control potential bias stemming from my experiences, beliefs, knowledge, or values, I have focused on acknowledging and sharing my reflexive thoughts, increasing the credibility of this study (Cutcliffe, 2003; Gough & Madill, 2012). I utilised different methods to achieve this, as outlined in Chapter Five.

### **Language and Key Terms**

#### ***Forest Bathing***

FB translates from the Japanese term 'Shinrin-Yoku', where 'Shinrin' means forest and 'Yoku' means bath. According to Li (2018), FB is defined as:

...bathing in the forest atmosphere or taking in the forest through our senses. This is not exercise, or hiking, or jogging. It is simply being in nature, connecting with it through our sense of sight, hearing, taste, smell and touch. (p. 7)

The author suggests that FB bridges the gap between humans and the natural world. It was developed in Japan in 1982 as a public health intervention to manage 'Karoshi' - worker stress, which was above 50% due to increasing technology use (Li, 2012, 2018). FB is still widely practised in Japan (Li, 2012), facilitated by wide forestation, conscientious government recommendations (Morita et al., 2007), and the cultural focus on valuing nature, such as Shintoism and Buddhism (McEwan et al., 2021).

Various related terms have since been used to describe FB across literature, including forest therapy, nature therapy, forest walks, and forest healing (Gobster et al., 2022). The current study uses the term 'FB' to remain close to the origins and avoid the medical term 'therapy', which carries negative connotations for PWDs, as advised by the Experts by Experience (EbE) consulting the study.

FB can be a self-guided activity or accompanied by a certified guide (Kim & Shin, 2021). While most FB sessions involve walking along forest paths (Cooper, 2021; Song, 2019), FB can also occur in stationary locations and non-forested environments: designed gardens, urban green spaces, and remotely through a window or digitally. The foremost activity categories included in FB are relaxation exercises, five-sense exercises, meditation, group sharing, hands-on interactions with nature, and nature-based arts (Gobster et al., 2022).

### ***Mindfulness***

Mindfulness is commonly incorporated in FB programs, including multi-sensory engagement (Gobster et al., 2022). It is defined as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145). During mindfulness practice, individuals concentrate on their

internal experiences, such as thoughts, emotions, bodily sensations, and external stimuli, like sights and sounds, without automatically responding to or judging these experiences (Segal et al., 2002).

### ***Connectedness***

Connectedness can be defined as “the state of being connected and having a close relationship with other things or people” (Cambridge University Press, n.d.). In this study, the term is used broadly to encompass participants’ varied experiences of connecting that may occur through their practice of FB, focusing mainly on connectedness to oneself, other people, and nature.

### ***The Self***

Kleine et al. (1993, p. 209) describe the self as “a sense of who and what we are”. The self encompasses the entirety of an individual and is a collection of cognitive representations that reflect one’s personality traits linked to their biographical experiences (Leary & Tangney, 2012; Owens, 2006). The self can encompass elements beyond trait attributes, such as social roles and identities (Thoits, 1995). An individual’s culture, environment, and family shape the “very early acquired roots of individual self” (Maslow, 1962, p. 178), and its development is influenced by social interactions, language, and self-reflection (Owens, 2006).

The reflective process of determining ‘Who am I?’ is influenced by gender, culture, race, socioeconomic status, educational achievements, and others’ perceptions of our physical traits (Murugami, 2009). The presence of a disability also impacts this process, considering culturally normative standards like beauty, strength, energy, and endurance (Meissner et al., 1967; Todorović, 2002). Thus, formulating a solid sense of self may be challenging for this population (Murugami, 2009).

### ***People with Disabilities and/or Physical Health Difficulties***

Various models define disability and inevitably impact the research approach and methods; therefore, researchers need to share their perspectives (Smith & Perrier, 2014). I view disability

through a Social Model of Disability lens (SMD; Bingham et al., 2013; Shakespeare, 2006), which posits that disability is not an attribute of an individual but rather a construct of social barriers and exclusions (e.g., discriminatory cultures, policies or institutional practices), faced by people with impairments (i.e., physical or mental restrictions), which fail to accommodate these differences, limiting full participation in community life (Booth, 2000; Goodley, 2001; Palmer & Harley, 2012). I recognise that societal stigma, attitudes, and the degree to which impairment is 'disabling' varies greatly across those with visible and non-visible disabilities, as well as those with disabilities present since birth or disabilities acquired during their lifetime (Bogart et al., 2019; Ysasi et al., 2018). I also adopt a Disability Justice lens (Jampel, 2018), recognising other systemic oppressions and that PWDs with intersecting marginalised identities (e.g., race, gender) face disproportionate barriers (Kuran et al., 2020).

In contrast, the Medical Model of Disability (MMD), dominant in Western society, views disability as an individual issue and a limitation in function resulting from physical or mental impairments due to disease or injury (Forhan, 2009). It focuses on medical interventions to correct or alleviate impairments, promoting conformity to conventional functional norms to reach recovery (Bingham et al., 2013; Mitra, 2006).

Language has power over oppressed groups in society, and self-identity can be closely linked to labels used to describe people with disabilities (Haller et al., 2006). The debate between using identity-first language (e.g., 'disabled people') and person-first language (e.g., 'people with disabilities') to refer to individuals with disabilities is ongoing (Sharif et al., 2022). These authors investigated language preferences among people with disabilities and found that while most preferred identity-first language, preferences varied within and across disability and age groups, genders, and countries.

Following Sharif et al. (2022) recommendations to follow the individual users' preferences to enhance inclusivity, language preferences considered suitable for participants were discussed with

consultants. It was recognised that some people may not see themselves as 'disabled' (Watson, 2002) or may feel hampered by negative associations already attached to this term (Haller et al., 2006). Thus, a less medical term, 'people with physical health difficulties', was seen as more encompassing when approaching participants, ultimately being led by their preferences. However, it was also acknowledged that the term 'disabilities' is a longstanding perspective promoted by disability rights activists to have society recognise them as a legitimate minority group facing societal barriers and discrimination (Fleischer & Zames, 2001). To emphasise this perspective and align with current disability research contexts, as well as represent the researched demographic's preferences, in alignment with Sharif et al. (2022), it was agreed to use the person-first term 'people with disabilities', which has been abbreviated as PWDs in the main body of the thesis.

## **Overview of Empirical and Theoretical Literature**

### ***Individual, Interpersonal, and Environmental Disconnection***

Humans are inherently social beings and have an innate need to connect to each other (Baumeister & Leary, 1995) and to nature (Kellert & Wilson, 1993), concepts rooted in evolutionary history. However, urban evolution has transformed modern societies (Michalsen, 2019). People are increasingly disconnected from communities (Dijulio et al., 2018) and nature, spending less time outdoors (Kuhn, 2001) and more time with technology (Bratman et al., 2019; Louv, 2005), further disconnecting them from themselves and others (Serlin, 2011). This disconnection was exacerbated by the Covid-19 pandemic (Pandya & Lodha, 2021), leading to a chronic 'stress state' (Song et al., 2016) and a new epidemic of loneliness (Office of the U.S. Surgeon General, 2023; Gallup & Meta, 2023). Approximately one-in-twelve individuals in industrialised nations report loneliness at levels detrimental to mental and physical health (Surkalim et al., 2022). Thus, individual, societal, and environmental disconnection is a pressing public health concern due to its impact on longevity, health, and well-being (Berkman & Krishna, 2014; Klussman et al., 2020; Murphy, 2023).

### ***Exclusion of People with Disabilities***

Social disconnection has a high impact on PWDs, whose social networks are often limited to family and professionals (Hall, 2009), meaning they receive less social support and are more isolated than the general population (Krahn et al., 2015; Mithen et al., 2015). This is due to barriers such as financial, inaccessible social and physical environments, lack of additional assistance, choice, and information, all leading to reduced opportunities to participate (Burholt et al., 2017; Darcy et al., 2017; Kitchin et al., 2019).

According to the World Health Organization (WHO), one-in-six people globally live with one or multiple disabilities, with an increase expected due to an ageing population (WHO, 2022, 2023). Disability is one of the most stigmatised identities across cultures and history (Wiener & Willborn, 2011). Environmental inaccessibility can particularly stigmatise PWDs (Mutua, 2001) and can influence how people interpret their disability and others' perceptions of it (Barnes, 2011). Understandably, PWDs are more likely to report loneliness, low social connectedness (Emerson et al., 2021), and low self-esteem (Trani et al., 2020). The latter aligns with theories suggesting that our sense of self and connection to self is shaped by other's perceptions and the quality of our relationships (e.g., reflected appraisals theory, Cooley, 1902; attachment theory, Bowlby, 1973). Owing to such persistent health inequities, PWDs tend to have shorter lifespans, poorer health and well-being, and lower levels of independence and income than the general population, all of which have been worsened by the COVID-19 pandemic (Leigh-Hunt et al., 2017; Kwiatkowski et al., 2014; WHO, 2022).

### ***Nature Exposure***

Nature provides opportunities to develop much-needed social connections, given the social disconnect and exclusion experienced by PWDs (Cheesbrough et al., 2019). Nature has been utilised to improve human health for centuries (Abraham et al., 2010), and an increasing amount of research evidence confirms it can be a significant resource (Keniger et al., 2013). Studies demonstrate that



nature exposure can foster social bonding (Goldy & Piff, 2020; Oh et al., 2022) and an improved ability to see the world from others' viewpoints (Goldy & Piff, 2020; Mayer & Frantz, 2004). Additionally, participants in laboratory settings watching nature films (Zelenski & Nisbet, 2014) or resting in a room with plants (Weinstein et al., 2009) showed more generous behaviour than the control groups.

Urban nature exposure, such as street trees and parks, is linked to neighbourhood social cohesion (Holtan et al., 2015; Kuo et al., 1998). It can be experienced as relational and accepting, fostering a stronger sense of self, connection, and care for both the human and more-than-human world (Birch et al., 2020). Correspondingly, research shows that spending just five minutes in a park increases feelings of interconnectedness with the world beyond oneself (Neill et al., 2019).

Nature exposure also positively impacts mental health, including reduced loneliness, anxiety, and depression, increased self-esteem, relaxation (Soga et al., 2021), and reduced rumination (Bratman et al., 2015). Additionally, it leads to increased physical activity, improved sleep quality, lower blood pressure, enhanced prefrontal cortex activity responsible for emotional regulation, and reduced stress and cortisol levels (Jimenez et al., 2021; Yao et al., 2021). Studies also demonstrate that phytoncides emitted by trees increase and activate the white blood cells responsible for fighting infections and cancerous cells, supporting immune function (Komori et al., 1995; Li et al., 2009).

Therefore, literature suggests that nature may address some challenges faced by PWDs by enhancing physical and mental well-being and social connectedness. Despite these benefits, access to urban green spaces has been unequal for PWDs. These areas are typically designed for the general population and often lack the necessary infrastructure to accommodate individuals with mobility impairments or disabilities (Seeland & Nicole, 2006). Additionally, PWDs are more likely to experience poverty (Jackman et al., 2021), and low-income neighbourhoods have less access to urban green spaces (Wolch et al., 2014), further exacerbating the adverse effects of social disconnection. Moreover, PWDs expressed that the frequent risk of violence and hate crime prevents

safe enjoyment of nature (Mental Health Foundation, 2021). According to this report, these adverse effects are multiplied for PWDs who also identify as young people, women, or belong to the LGBTQI+ and the Global Majority communities.

### ***Relevant Government Policy Initiatives***

Reducing barriers to social participation for PWDs is a target of the United Nations Convention on the Rights of Persons with Disabilities (Quinn & Doyle, 2012) and of the UK government's National Disability Strategy (NDS, 2021) and Disability Action Plan (2024). The latter highlights social isolation amongst PWDs and environmental challenges (e.g., how cities are built and communities are formed) as immediate action areas.

In accordance with the literature outlined above, the government's NDS (2021) policy document identified participation in natural environments as especially beneficial for health and well-being (White et al., 2017). Similarly, their 25-Year Environment Plan (2018) pledged to create more accessible natural spaces near people's homes and workplaces, encouraging them to spend more time outdoors to obtain these benefits. The latter document also aims to establish how NHS mental health services can work in alliance with environmental voluntary sector organisations to offer interventions (e.g., gardening) for those struggling with mental health, loneliness, and isolation. PWDs' participation in outdoor activities has been shown to positively impact the individual level (e.g., physical health, autonomy) and the community level well-being, including the development of social networks and raising disability awareness (Labbé et al., 2019).

One approach to achieve this has been 'green social prescribing', in which link-workers or healthcare professionals refer individuals to community-based nature activities (e.g., green gyms) to address mental, physical, or social needs (Muhl et al., 2023). The green prescription program was launched in 2021 and tested across seven UK sites, mainly based in Midland-UK (NHS England, n.d.). This aligns with the National Academy for Social Prescribing (NASP, 2021) attempts to develop widely accessible social prescribing activities that reduce health inequalities and the NHS Long Term Plan

vision to create 1000 link workers in post by 2024, facilitating over 900,000 referrals (NHS, 2019). The program demonstrated 85% uptake, strong engagement in communities facing social inequalities, and positive improvements in mental health and well-being (NHS England, n.d.). Reviews of such nature-based interventions showed reduced social isolation, increased inclusion, social contact, nature and community connectedness and a sense of belonging (Bragg & Atkins, 2016; Leavell et al., 2019).

### ***Increasing Efforts through Forest Bathing***

Researchers argue that most green social prescription programs focus on nature exposure. However, the benefits mentioned previously are significantly enhanced when one moves beyond mere nature exposure to actively connecting to nature (Dobson et al., 2020; Martin et al., 2020): “Time does not tell the full story. What matters is how that time is spent—developing and being in a close relationship with nature” (Richardson et al., 2021, p. 24).

Lumber et al. (2017) identified five activities that enhance nature connectedness: engaging with nature through the senses, appreciating its beauty, sharing and reflecting on nature-inspired emotions, exploring the meaning nature brings to life and compassionate care for nature. These activities resemble those in FB practices (Gobster et al., 2022). Farkic et al. (2021) demonstrate that FB heightens awareness of physical, cognitive, and emotional processes, focuses on sensory experiences, and encourages reflection on the meanings and experiences nature provides. Therefore, FB could effectively promote much-needed nature connectedness, as evidenced by McEwan, Potter, et al. (2022). In addition to the nature exposure benefits outlined above, this practice has also been linked with multiple psycho-eco-social advantages, including improved psychological and physical well-being, greater self and other compassion, stronger relationships with others, a sense of belonging, and pro-environmental behaviours (Clarke et al., 2021; Lee & Son, 2018; Li et al., 2007; McEwan et al., 2021; Oe & Yamaoka, 2023). Thus, FB could offer a holistic approach to support the government initiatives detailed previously.

However, evidence of how green social prescription programs have benefitted PWDs and how accessible and inclusive they have been for this population is lacking. McEwan et al. (2023) suggest that, generally, nature interventions do not make sufficient provisions for PWDs, and increased accessibility efforts are therefore required. White et al. (2018) proposed that virtual nature programs could help increase accessibility, and Markwell and Gladwin (2020) showed that virtual FB programs are as effective as in-person programs. McEwan et al. (2023) also demonstrated that such virtual FB sessions can effectively apply to PWDs. Nevertheless, research exploring experiences of accessible online or in-person FB programs for PWDs is sparse.

### **Relevant Theories and Models**

Various theories and models offer explanations for the beneficial effects of nature exposure and connectedness. Three key viewpoints are considered to aid in interpreting the study.

#### ***Stress Reduction Theory***

Stress reduction theory (SRT; Ulrich, 1981; Ulrich et al., 1991) suggests that natural environments aid stress recovery, whereas urban environments increase stress. Since humans evolved in natural settings, engagement with nature remains inherently calming and beneficial for survival. Exposure to actual or artificial non-threatening natural elements (e.g., vegetation or water) activates the parasympathetic nervous system associated with relaxation, reduced stress symptoms such as high blood pressure or heart rate, and increases wakeful relaxed attention, and positive emotions like pleasure and calm (Capobianco et al., 2018; Van den Berg et al., 2015; Wang et al., 2016). This increases an inclination to spend time in nature. In contrast, urban environments with overwhelming stimuli are linked with increased sympathetic nervous system, arousal, anxiety, and fatigue (Van den Berg et al., 2015).

### ***Attachment Theory***

Studies found that increased individual and social well-being linked to nature connectedness is attributed to the sense of place attachment that nature offers (Basu et al., 2020; Rollero & Piccoli, 2010). While attachment to nature is relatively new in the Western context, reciprocal relationships with the natural environment are well-recognised and hold significant importance for Indigenous peoples (Kingsley et al., 2013; Mazzocchi, 2020; Russell et al., 2020).

Attachment theory (AT) emphasises the importance of having a secure and safe attachment figure as a foundation for psychological well-being, creating healthy 'mental representations' of oneself in relation to others, developing healthy self-esteem (Huntsinger & Luecken, 2004), and forming positive and safe relationships with others (Bowlby, 1973; 1980; Geller & Porges, 2014; Mikulincer et al., 2013). Mair (2020) argues that this is a foundational relationship, offering a secure base that fosters confidence and a willingness to explore the world, thereby supporting the development of other connections and a safe haven – a source of physical and emotional comfort when in need.

This explains experiences of stress reduction, relaxation, increased self-esteem, and openness to social connections associated with nature connection (e.g., Goldy & Piff, 2020; Lee & Son, 2018; Soga et al., 2021). Similarly, FB may provide further attachment relationships through group membership.

### ***Three Systems Model***

Gilbert's (2009) three-systems model (TSM) of emotional regulation posits that supportive relationships help us manage our threat system, linked with anxiety, avoidance, and safety-seeking, by either increasing the drive system, associated with motivation, achievement, joy, and vitality, or the soothing system, related with bonding, safety, calm and relaxation. Richardson et al. (2016) propose that this model could be applied to nature, and Kotera et al. (2022) concurs with this in their

review of FB's impact on well-being, providing a helpful framework for interpreting the benefits of nature and FB.

### **Literature Conclusions**

The literature demonstrates that modern Western societies are disconnected, and PWDs face disproportionate societal exclusion and discrimination. These are associated with multiple adverse psychological effects that nature could mitigate. However, access to and safety in green spaces is lacking. Current government attempts to address these challenges lack subsequent reports of their feasibility, accessibility, and effectiveness for PWDs. Accessible FB programs may offer a solution for PWDs by fostering connectedness and reducing isolation (e.g., Neill et al., 2019; Oh et al., 2022). However, research on FB applicability for PWDs is also sparse (e.g., McEwan et al., 2023). Furthermore, most existing research regarding connectedness is quantitative, making it challenging to understand the underlying processes that produce positive effects and indicating a need for qualitative exploration of people's experiences. To help achieve this, a review of the literature to understand current knowledge on this topic is necessary. Given the lack of FB research exploring the experiences of PWDs, the following SLR will examine available qualitative evidence on the experiences of connectedness through FB in the general population.

## Chapter 2: Systematic Literature Review

### Overview

This chapter outlines an SLR pertinent to the research questions and objectives of the current study. SLR is a high-quality, rigorous, and thorough process that involves finding, evaluating, and synthesising all empirical evidence that meets specific eligibility criteria to address a particular research question (Cumpston et al., 2023; Siddaway et al., 2019). It provides a balanced and unbiased summary of existing literature (Nightingale, 2009) and helps identify gaps in current knowledge, establishing a foundation and rationale for advancing understanding (Fink, 2005; Webster & Watson, 2002). This SLR addresses the question: “What does the qualitative literature tell us about people’s experience of connectedness through forest bathing?”

### Method

A preliminary literature search revealed that most existing studies on FB are quantitative (e.g., Li et al., 2007), with few examining connectedness (e.g., van Houwelingen-Snippe et al., 2020) and even fewer focusing on individuals with PWDs (e.g., McEwan et al., 2023). Thus, the review question was repeatedly adjusted to maintain relevance and ensure a broad enough focus to include sufficient studies. For instance, the literature on PWDs and FB was too limited and required broadening, whereas exploring people’s general experiences of FB was too broad and lost relevance to the current research. This SLR, with its unique focus on qualitative data, aims to complement the predominantly quantitative data. It allows for a deeper exploration of people's experiences, meaning-making, and perspectives that quantitative methods may not fully capture (Willig, 2008). This SLR includes qualitative studies and qualitative elements from the mixed methods studies.

A scoping search on the Cochrane Library and Prospero revealed only one related SLR, which explored how connectedness with nature combats loneliness (Sachs et al., 2024). However, this review included a broad range of nature-based social prescribing practices, such as physical exercise

and gardening, which do not align with the specific definition of FB used in this study (i.e., Li, 2018) outlined in the Introduction. Therefore, this SLR provides a more refined focus on FB, making it more relevant to the current research. The inclusion criteria for this SLR require that interventions described in the studies incorporate the two fundamental aspects of FB, as Li (2008) defined: taking in nature and connecting to it through one's senses. This applies regardless of any additional elements added to the intervention or the specific terms used to name the intervention, as these factors can vary greatly, as described in the Introduction.

Given that guided and unguided FB practices may differ (Kim & Shin, 2021), this SLR included only studies on guided group FB interventions. Guided practices help to ensure participants' adherence to fundamental FB principles, increasing comparability across studies. The connectedness examined in this SLR aligns with the definition of connectedness provided in the Introduction. Non-English studies were excluded due to time constraints and budget limitations for translation services (Neimann-Rasmussen & Montgomery, 2018). Additionally, the review encompassed people of all age groups and characteristics to ensure a comprehensive search. Full inclusion and exclusion criteria are outlined in Table 1.

**Table 1**

*Systematic Literature Review Inclusion and Exclusion Criteria*

Inclusion criteria	Exclusion criteria
Published in peer-reviewed journals.	Published in non-peer-reviewed journals or grey literature.
Available in the English language (including translated papers).	Papers not available in English.
Qualitative and qualitative parts of the mixed methods research design studies.	Quantitative research design.
Refers to both elements of the practice of forest bathing in line with the definition provided by Li (2018): <ol style="list-style-type: none"> <li>1. Taking in nature – <i>including papers that refer to physically being in nature and/or exposure to nature through other mediums (e.g., virtual reality).</i></li> </ol>	Does not refer to the practice of forest bathing in line with Li's (2018) definition.



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2. Connecting with nature through our senses – including papers that refer to using five senses (i.e., sight, smell, hearing, touch, taste) and/or mindfulness.	
Refers to the practice of guided group forest bathing.	Refers to the practice of un-guided individual forest bathing.
Findings refer to experiences of connectedness through the practice of forest bathing.	Findings do not refer to connectedness as experienced through the practice of forest bathing.
Empirically based and not systematic literature reviews.	Not empirically based (e.g., books/ theoretical/ reflective/ descriptive papers) and systematic literature reviews.

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### **Search Strategy**

The SLR electronic database search was conducted between 13 January 2024 and 20 February 2024 using PubMed, Scopus, PsycArticles, PsycINFO, Medline, Cinahl Plus, and GreenFILE. These databases were selected for their comprehensive coverage of psychosocial literature across disciplines such as applied social sciences, medicine, and nursing and for including publications on FB. The search utilised a variety of terms related to three key concepts: FB, connectedness, and qualitative research (Table 2). These terms were derived from commonly used terms in relevant SLRs and research articles and supplemented by synonyms identified through the Thesaurus, as recommended by Siddaway et al. (2019). Some terms were truncated to capture multiple-word endings and plurals (e.g., survey\*), while others were enclosed in double quotation marks to ensure exact phrase matching (e.g., “shinrin yoku”). Boolean operators AND and OR were used to combine the search terms. The library search planning form was used to facilitate the process and outlines a complete list of the included and excluded search terms and the full electronic search strategy (Appendix A).

**Table 2***Literature Search Terms*

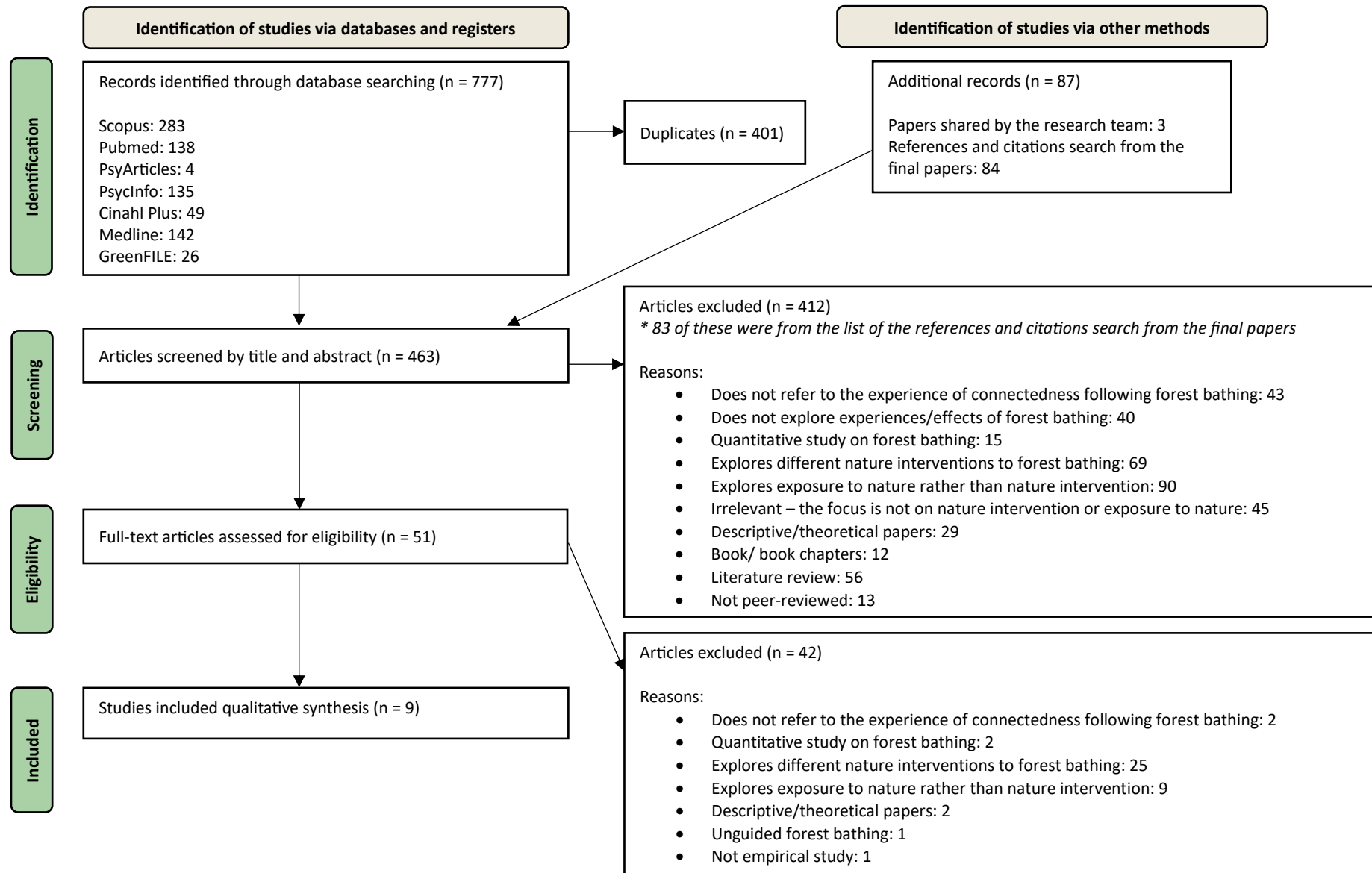
Concept 1: Terms relating to forest bathing		Concept 2: Terms relating to connectedness		Concept 3: Terms relating to qualitative research
"forest bathing" OR "forest therapy" OR "Shinrin yoku" OR "nature therapy" OR "nature prescri*" OR "green prescri*" OR "outdoor therapy" OR "park therapy" OR "nature immersion*" OR "nature-based therapy" OR "nature-based intervention*" OR "nature intervention*" OR "greenspace intervention*" OR "green space intervention*"	AND	connect* OR reconnect* OR interconnect* OR relat* OR interrelate* OR social* OR bond* OR lonel* OR isolat* OR contact* OR belong* OR interact* OR network* OR integrat* OR reintegrat*	AND	qualitative OR interview* OR "focus group*" OR narrative* OR "grounded theory" OR "case study" OR observation* OR survey*

**Search Process**

The full search process, including article identification, screening, and eligibility checks, is outlined in Figure 1, the adapted Prisma flow diagram (Page et al., 2021). This was conducted using Covidence (2024) software. The initial database search identified 777 articles, of which 401 duplicates were removed. An additional 87 articles were identified; the supervisory team shared 3, and 84 were found later by conducting a references and citations search of the final papers included in the review. A further 412 papers were excluded after screening titles and abstracts against the inclusion criteria, resulting in 51 articles being selected for full-text screening. Of these, nine articles satisfied the criteria for inclusion in the review. Eight of these originated from the database search, and only one was identified through the references search mentioned previously.

Figure 1

Prisma 2020 Flow Diagram (Adapted)



## Search Results

Table 3 below summarises details of the nine empirical studies included in this SLR, including the findings relevant to this review, strengths, and limitations. All studies explore the experiences and feasibility of various forms of FB across diverse populations and contexts. Six of these papers used qualitative methods (Duffy et al., 2020; Evans et al., 2023; Lee & Son, 2018; Lee et al., 2019; McEwan et al., 2023; Poulsen et al., 2016) and three used mixed methods (Corazon et al., 2018; McEwan, Collett, et al., 2022; McEwan, Potter, et al., 2022). One paper focused on the experiences of the elderly (Lee & Son, 2018), one on adolescents (McEwan, Potter, et al., 2022), and the remaining seven on adults. Three studies included clinical mental health populations, such as people diagnosed with binge eating disorder (Corazon et al., 2018; Evans et al., 2023; Poulsen et al., 2016); five focused on populations at risk of isolation and associated mental health difficulties, such as long-COVID patients (Lee & Son, 2018; Lee et al., 2019; McEwan, Collett, et al., 2022; McEwan et al., 2023; McEwan, Potter, et al., 2022), and one a non-clinical population of counsellors (Duffy et al., 2020). Two studies described an intervention taking place in the United Kingdom (McEwan, Collett, et al., 2022; McEwan, Potter, et al., 2022), two in Denmark (Corazon et al., 2018; Poulsen et al., 2016), two in South Korea (Lee & Son, 2018; Lee et al., 2019), and singular studies in the USA (Duffy et al., 2020), Australia (Evans et al., 2023), and Canada (McEwan et al., 2023).

**Table 3***Summary of Studies Included in the Review*

No.	Authors (Year)	Title (Country)	Aims	Description of nature interventions	Methodology (inc. sampling and data collection)	Participants	Findings Relevant to Review	Strengths and Limitations
1	Corazon, S. S., Sidenius, U., Vammen, K. S., Klinker, S. E., Stigsdotter, U. K., & Poulsen, D. V. (2018)	The Tree Is My Anchor: A Pilot Study on the Treatment of BED through Nature-Based Therapy. (Denmark)	The qualitative aspect aimed to assess the feasibility of using nature-based therapy (NBT) for treating Binge Eating Disorder (BED).	ACT-based NBT: 12-week group sessions with two therapists, integrating seated and walking exercises in a forest therapy garden.	Design: Mixed methods.  Recruitment: Online newsletters from the organisation offering support group meetings for BED (convenience sampling)  Qualitative data collection: Semi-structured interviews, conducted 3 months post-intervention	N = 4.  Mean age: 47 years.  Gender: all females.  All participants met the DSM-5 criteria for BED.	Qualitative findings regarding increased connections to presence, building relationships with natural objects and one's surroundings, nature mirroring the self and increasing empathy for self, and nature increasing motivation and grounding in therapeutic work.	Strengths: <ul style="list-style-type: none"> <li>Comprehensive review of existing BED research and treatment approaches.</li> <li>Clear definition of terms, treatments, and research questions.</li> <li>Detailed inclusion/exclusion criteria and ethical considerations.</li> <li>Thorough description of interventions and procedures.</li> <li>Identification of reasons for participant drop-outs.</li> <li>Appropriate conclusions emphasise NBT's potential for BED treatment while acknowledging the need for more extensive trials and dietary inclusion.</li> </ul> Limitations: <ul style="list-style-type: none"> <li>Very small sample size and overrepresentation of women limit result richness and transferability.</li> </ul>

								to explore NBT benefits.		<ul style="list-style-type: none"> <li>Limited participants' demographic characteristics reported.</li> <li>The specialist design of forest therapy garden design may limit applicability in different settings.</li> <li>Absence of participant debriefing.</li> <li>Researchers' epistemology and reflexivity are not addressed.</li> <li>Unclear whether the change results from ACT or the NBT itself.</li> </ul>
								Qualitative data analysis: Content analysis.		
2	Duffy, J. T., Springer, S., Delaney, M., & Luke, M. (2020).	Eco-Education: Integrating Nature into Counselor Education. (USA)	To investigate the experiences of Counsellors in training (CITs) exposed to nature-based interventions (NBIs) as part of a core human development counselling course.	Group NBIs were added to a core human development counselling course. Students read counselling and nature-related articles and participated in three excursions: guided visits to a water and wooded area and a solo visit to a natural setting of their choice.	Design: Modified consensual qualitative research (CQR). Recruitment: Emailing students enrolled in counselling courses at two institutions (purposive sampling). Data collection: Semi-	N= 10. Age: 21-55 years old. Gender: 8 females, 2 males. Ethnicity: 6 White, 2 Latino, 1 Black, 1 Southeast Asian.	<ul style="list-style-type: none"> <li>Interpersonal impact: NBIs strengthened bonds between participants and professors, fostering camaraderie and nature appreciation.</li> <li>Intrapersonal impact: Participants experienced better physical, emotional, and cognitive well-being, improving their engagement and learning during activities.</li> <li>Counsellor development: The activities offered valuable resources for counsellor development, promoting self-care</li> </ul>	Strengths: <ul style="list-style-type: none"> <li>Clear rationale and necessity of the study are stated.</li> <li>CQR ensures a rigorous consensus process during data collection.</li> <li>Participants included through member checking.</li> <li>Efforts made to diversify the geographic locations of NBIs, enhancing their applicability to other contexts.</li> <li>Transparency regarding researchers' shared characteristics with participants and program connections.</li> <li>Detailed discussion of the reflexivity process guiding the research.</li> <li>Use of bracketing and bias prevention processes to ensure</li> </ul>		

				Activities included mindful plant sketching, sensory engagement, and reflections on nature's parallels to human development.	structured interviews.		awareness and practical skills for client work.	<p>an inductive approach to data analysis.</p> <ul style="list-style-type: none"> <li>• Obtained ethics approval and outlined ethical considerations.</li> <li>• Although the epistemological standpoint was not explicitly outlined, the data collection method followed a consistent approach.</li> <li>• Clear and practical implications and suggestions outlined.</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• Instructor's unique style, course structure, school context, and natural habitat may limit applicability to other contexts. The authors acknowledge that applicability depends on the reader's context.</li> <li>• Incomplete Data: Some participants declined interviews, potentially impacting data comprehensiveness and interpretation.</li> </ul>
3	Evans, S., Livingstone, A., Dodds, M., Kotte, D., Geertsema, M., & O'Shea, M. (2023).	Exploring Forest Therapy as an Adjunct to Treatment as Usual within a	To investigate the experiences of individuals undergoing Forest Therapy (FT)	Six monthly guided, manualised group FT sessions, lasting 2–3 hours, were conducted alongside psychological	Design: Qualitative, phenomenological design.  Recruitment: People who met the inclusion	N = 10.  Mean age: 45 years.  Gender: 3 male, 6 female, 1	<p>Stage One: Building Security</p> <ul style="list-style-type: none"> <li>• Forest environment provided peace and calmness.</li> <li>• Lack of pressure in FT allowed immersion.</li> </ul> <p>Stage Two: Deep Connections</p>	<p>Strengths:</p> <ul style="list-style-type: none"> <li>• Relevant interventions are clearly described and backed up by existing research.</li> <li>• The unique contribution and rationale of the study are highlighted, showing a real need for the research.</li> <li>• Ethical considerations and processes outlined.</li> </ul>

<p>Community Health Counselling Service.  (Australia)</p>	<p>alongside their regular counselling treatment.</p>	<p>treatment in various forest settings. This involved a mindful grounding exercise, forest immersion using one's senses, and a tea ceremony. Participants received a leaflet encouraging brief daily practice in between FT sessions.</p>	<p>criteria and sought mental health support from an Australian community counselling service were asked to join the study. (purposive sampling)</p> <p>Data collection: Semi-structured interviews with participants and field observation of FT sessions by researchers.</p> <p>Data analysis: Reflexive thematic analysis.</p>	<p>non-binary. 6 participants attended 1-3 sessions, 3 – 4 sessions, and 1 – 1 session.</p> <p>All participants had various mental health conditions.</p>	<ul style="list-style-type: none"> <li>• Participants connected deeply with nature and each other.</li> <li>• FT facilitated mindfulness and relieved rumination.</li> </ul> <p>Stage Three: Lasting Impact</p> <ul style="list-style-type: none"> <li>• FT led to spiritual awakenings, acceptance, and gratitude.</li> <li>• Improved mental health was noted: better mood, better sleep, and reduced anxiety.</li> <li>• Enhanced overall well-being and motivation for outdoor activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Researcher's epistemological position described.</li> <li>• Rationale for sample size outlined.</li> <li>• Inclusion/exclusion criteria clearly outlined.</li> <li>• Varied forest settings used support transferability.</li> <li>• Participants involved through member checking.</li> <li>• Reflexivity processes outlined facilitating rigour and trustworthiness.</li> <li>• Data analysis process outlined in detail.</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• The recruitment process lacks information.</li> <li>• Lack of reflections on authors' characteristics, relationship to research and how these may influence data collection and findings.</li> <li>• Data interpretation seems appropriate, but evidence to support interpretations could be more substantial.</li> <li>• Lack of exploration into FT's impact on engagement in psychotherapy.</li> <li>• Lack of clarity on how FT was incorporated in psychotherapy.</li> </ul>
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4	Lee, H. J., & Son, S. A. (2018).	Qualitative assessment of experience on urban forest therapy program for preventing dementia of the elderly living alone in low-income class.	To explore how low-income elderly individuals living alone perceive the urban forest therapy program in their daily lives and the changes they have experienced as a result.	Five weekly, 3h group sessions in an urban forest in Seoul.	Design: Qualitative. Recruitment: Participants from two areas in Seoul, South Korea (purposive sampling).	N = 21. Age: over 65 years. Gender: 8 men, 13 women.	The program facilitated participants' learning about healthy lifestyles, forest visits, and relationship-building.	Strengths: <ul style="list-style-type: none"> <li>• Clear rationale and methodology appropriate for research goals.</li> <li>• Findings presented clearly with examples and figures relevant to research questions.</li> <li>• Participants included through member checking.</li> <li>• Discussion on the transferability of findings to other populations.</li> </ul>
			To identify green welfare measures for this population based on the study findings.		Data collection: 1.5-hour focus group interviews post-program.		Awareness of urban forests and the therapy program fostered connections with: <ul style="list-style-type: none"> <li>• Self: Participants viewed the forest as a safe space for self-reflection.</li> <li>• Neighbours: Engagement in the program strengthened connections within the local community.</li> <li>• Nature: The forest was seen as a peaceful retreat from urban life.</li> </ul>	Limitations: <ul style="list-style-type: none"> <li>• Based on a short-term program, outcomes of longer sessions may differ.</li> <li>• Personal characteristics and regional influences may impact results.</li> <li>• Ethnicity and other identity characteristics of participants not addressed.</li> <li>• Rationale for selecting participants from two areas in Seoul not provided.</li> <li>• Absence of researchers' epistemology and reflexivity.</li> <li>• Recruitment process and advertisement unclear.</li> <li>• Management of potential conflicts/discomforts during focus groups not mentioned.</li> <li>• No mention of debriefing forms or support signposting.</li> </ul>
					Data analysis: Thematic analysis.		This awareness spurred motivation to combat depression and loneliness and improve health habits.	
							Positive changes were noted in: <ul style="list-style-type: none"> <li>• Enhancement of mental and emotional well-being.</li> </ul>	

							<ul style="list-style-type: none"> <li>• Mitigation of feelings of isolation and loneliness.</li> <li>• Improvement in health-related habits.</li> </ul> <p>Negative changes were associated with:</p> <ul style="list-style-type: none"> <li>• Short program duration.</li> <li>• Accessibility challenges.</li> </ul> <p>These issues contributed to difficulties in maintaining relationships.</p>	
5	Lee, H. J., Son, Y. H., Kim, S., & Lee, D. K. (2019).	Healing experiences of middle-aged women through an urban forest therapy Program. (South Korea)	To investigate: 1) The psychological shifts in middle-aged women during the urban forest therapy program. 2) The reasons behind these changes in the group.	Four weekly urban forest therapy group sessions were conducted in a citizen's forest in Seoul Metropolitan City and facilitated by two forest therapy guides. The activities involved sensory engagement, warming up and stretching exercises, therapeutic activities,	Design: Qualitative. Recruitment: Volunteers were recruited via an online application (convenience sampling). Data collection: Focus group semi-structured interviews, conducted 24 weeks after	N = 7. Mean age = 58.7 years. Gender: All females. Ethnicity: Native Koreans. All housewives.	<ul style="list-style-type: none"> <li>• Participants were able to re-discover nature's value.</li> <li>• Participants reported improved self-esteem and self-confidence facilitated through social bonding and learning about nature and the program.</li> <li>• Participants reported relaxation and a sense of safety.</li> <li>• Participants developed a mindset of forgiveness, contributing to emotional healing and well-being.</li> <li>• Group activities in the forest environment facilitated participants'</li> </ul>	<p>Strengths:</p> <ul style="list-style-type: none"> <li>• Existing research related to the study is systematically considered, highlighting the unique contribution of the study.</li> <li>• Sufficient information is provided about participants' characteristics.</li> <li>• The data collection and analysis methods were clearly outlined and justified, aligning with the research approach.</li> <li>• Participants were compensated.</li> <li>• Adequate evidence is presented to support result interpretations.</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• The epistemology or philosophical standpoint is not explicitly outlined.</li> </ul>

				meditation, and feedback.	the program ended.			social interaction and emotional bonding.	<ul style="list-style-type: none"> <li>• Participants recovered their self-identity and became better able to express thoughts and feelings to others openly.</li> <li>• The program fostered a mental attitude change, promoting self-healing and self-care.</li> </ul>	<ul style="list-style-type: none"> <li>• The recruitment process lacks details.</li> <li>• Authors did not mention consulting participants.</li> <li>• Potential for recall bias due to interviews conducted five months post-program.</li> <li>• Interviews were conducted at a café, which may have restricted participants' openness. No discussion on how the authors handled confidentiality in a public space.</li> <li>• No discussion on how potential conflicts were managed in the focus group.</li> <li>• Ethical considerations lack detail.</li> <li>• Broader applicability is limited by focus on a specific demographic and context and a small sample size.</li> </ul>
6	McEwan, K., Collett, H., Nairn, J., Bird, J., Faghy, M. A., Pfeifer, E., Jackson, J. E., Cook, C., & Bond, A. (2022).	The Feasibility and Impact of Practising Online Forest Bathing to Improve Anxiety, Rumination, Social Connection and	The study aimed to determine the viability of online forest bathing as a practice for adults dealing with long-term COVID-19. Additionally	Four 1-hour weekly online forest bathing (FB) sessions, led by three qualified guides. Participants chose to join from home or local green spaces. Activities included an introduction	Design: Mixed methods.  Recruitment: Through social media adverts (convenience sampling).  Data collection: Brief written feedback of	N = 16.  Mean age: 37.13.  Gender: All females.  Ethnicity: White British.	Participants reported feelings of calm, joy, wonder, awe, and connection with nature and with others, which mirror the psychological effects of being outdoors. Positive statements about connecting with nature were paralleled by positive statements about connecting with others, indicating a sense of community and support	Strengths: <ul style="list-style-type: none"> <li>• Extensive review of the relevant research linking to a clear need and rationale for the study.</li> <li>• Ethical considerations outlined.</li> <li>• Experts by experience consultation used to help shape the study.</li> <li>• Clear rationale and methodology appropriate for research goals.</li> <li>• Sufficient information provided about participants' characteristics.</li> </ul>		

		Long-COVID Symptoms: A Pilot Study.	y, it aimed to gather initial data to examine whether engaging in online forest bathing (FB) could enhance overall well-being and alleviate symptoms associated with long-term COVID-19.	to FB, sensory activities, finding a 'sit spot' and observing nature, sharing circles, and peer learning. Participants at home were guided with nature photos/videos and encouraged to observe natural objects indoors.	the FB sessions.  Data analysis: It seems like thematic analysis (although explicitly not stated).	All participants had long-term COVID symptoms.  16 participants completed post-intervention and 6 one-month follow-up feedback.	within the virtual FB sessions.  Participants expressed that the sessions provided an escape from pain and rumination.  Some participants could apply skills learned during virtual FB sessions to cope with chronic illness in their everyday lives.	<ul style="list-style-type: none"> <li>• Reasons for participant drop-outs recorded.</li> <li>• Researchers' positionality and relationship to the study mentioned.</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• The researcher's epistemology is not outlined.</li> <li>• Qualitative data analysis is not named and lacks detail.</li> </ul>
7	McEwan, K., Krogh, K. S., Dunlop, K., Khan, M., & Krogh, A. (2023).	Virtual Forest Bathing Program as Experienced by Disabled Adults with Mobility Impairments and/or Low	To investigate the experiences of inclusion and the virtual forest bathing program's effects on well-being among adults	Accessible virtual forest bathing program conducted online via Zoom.  Led by five facilitators who are forest bathing guides and people with	Design: Qualitative.  Recruitment: Through community partner organisation (opportunistic sampling).  Data collection:	N = 26 (initial survey).  N = 23 (one-month follow-up survey).  Mean age: 57.04 years.	<ul style="list-style-type: none"> <li>• The use of visualisation and mirroring techniques allowed for a deeper connection to nature and one's senses.</li> <li>• Peer support from guides with disability fostered a sense of inclusion and emotional expression without judgment.</li> <li>• Participants experienced pain relief and increased</li> </ul>	Strengths: <ul style="list-style-type: none"> <li>• Comprehensive review of the existing forest bathing and accessibility research linking to a clear rationale for the study.</li> <li>• Clear definition of the terms and description of the nature program are provided.</li> <li>• Sufficient information is provided about participants' characteristics.</li> <li>• Experts by experience included in shaping the study.</li> <li>• Ethics approval obtained and ethical considerations outlined.</li> </ul>

<p>Energy: A Qualitative Study.  (Canada)</p>	<p>facing mobility impairments and/or low energy levels.</p>	<p>disabilities. Incorporating: Land acknowledgment; Introduction to contemplative communication and forest bathing; embodiment and mindfulness practices; 2D videos and images of nature designed to engage the senses, invitations to other varied nature connection options, peer support, and sharing experiences. Participants were also encouraged to engage in nature</p>	<p>Transcripts obtained from two 2.5-hour programs, capturing participant comments in real-time; Spoken or written surveys, conducted within 24 hours of the program and at a one-month follow-up.  Data analysis: Thematic analysis.</p>	<p>Gender: 19 female and cis, 6 male and cis, 1 female and trans.  Ethnicity: 23 White, 1 East Asian, 1 mixed ethnicity, 1 preferred not to say.  All participants had disabilities, including mobility impairment and/or low energy.</p>	<p>awareness and acceptance of their bodies.</p> <ul style="list-style-type: none"> <li>• People could connect to past nature experiences and memories, although this brought us complex emotions.</li> <li>• Adaptive program fostered a sense of self-agency.</li> <li>• Nature metaphors and community fostered a sense of shared humanity and interconnectedness.</li> <li>• Participants felt a stronger sense of belonging and community, with increased empathy towards others and nature.</li> <li>• Peer support and observing personal growth in others contributed to a deep sense of connection among participants.</li> </ul>	<ul style="list-style-type: none"> <li>• Accessible methods for participant engagement provided.</li> <li>• Data analysis is clearly described. Participants included in data analysis enhancing the validity and relevance of the study.</li> <li>• Provided visuals of the program to support the reader in getting a sense of the program.</li> <li>• Results appropriately interpreted in great detail.</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• Researchers' epistemology, positionality and relationship to the study are not outlined.</li> <li>• Study's demographic characteristics may limit applicability to other populations.</li> <li>• Participants were self-selected, potentially biasing results towards those already interested in nature-based interventions.</li> </ul>
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						connections at home.		
8	McEwan, K., Potter, V., Kotera, Y., Jackson, J. E., & Greaves, S. (2022).	'This Is What the Colour Green Smells Like!': Urban Forest Bathing  Improved Adolescent Nature Connection and Wellbeing.  (United Kingdom)	To assess whether an urban nature connection activity (ParkBathe) could improve adolescent s' nature connection and well-being.	Urban forest bathing sessions in a park in London, involving a 1.5h guided walk and activities led by two qualified forest bathing guides. Adapted to tailor adolescents. Activities included: Introduction explaining the history and purpose of forest bathing; visually inspecting trees; creation of natural artwork; listening activity to identify	Design: Mixed methods.  Recruitment: Adolescents, sampled from Scout groups via contacting the Scout group leads (opportunistic sampling).  Qualitative data collection: Pre- and post-intervention interviews, conducted immediately before and after a 1.5-hour ParkBathe session.  Qualitative data analysis:	N = 44.  Mean age: 13.05 years.  Gender: 17 females, 19 males, 3 other/pref er not to say.  Ethnicity: 30 white, 4 mixed, 3 Asian, 2 other.  All adolescent s from Scout groups, isolated unable to attend school due	Qualitative data results:  • Participants experienced the forest bathing intervention positively, expressing enjoyment, creativity, and a sense of being childlike and carefree.  • Social aspect of the activities was noted, indicating a sense of building confidence and connecting with others.  • Participants demonstrated being present in the moment by noticing the natural world around them, expressing observations, learning experiences, and a deep connection with nature.  • Activities positively impacted participants' mental health, leading to feelings of relaxation, calmness, and happiness, with some expressing deeper values and insights gained from the experience.	Strengths:  • Comprehensive review of the existing forest bathing and accessibility research linking to a clear rationale for the study.  • Sufficient information is provided about participants' characteristics.  • Ethical approval received and considerations addressed.  • Authors used reflexivity in data collection and analysis, avoiding potential biases.  • Appropriate analyses are conducted, aligning with the study's objectives and methodology.  • Results are discussed critically about existing research, avoiding over-interpretation.  Limitations:  • Researchers' epistemology, positionality and relationship to the study are not outlined.  • Opportunistic sampling from Scout groups from a local area may limit transferability to broader adolescent populations.  • Some adolescents exhibited self-consciousness during interviews,

				natural sounds;  touch activity involving sensory exploration of trees;  empathy activity in pairs, role-playing interviewing a tree, and sharing circles.	Thematic analysis.	to Covid-19.	<ul style="list-style-type: none"> <li>Overall, the findings suggest an immediate effect on connecting adolescents with people, nature, and themselves.</li> </ul>	potentially impacting the richness of data obtained.
9	Poulsen, D. V., Stigsdotter, U. K., Djernis, D., & Sidenius, U. (2016).	'Everything just seems much more right in nature': How veterans with post-traumatic stress disorder experience nature-based activities	To gain insight into the Danish veterans with post-traumatic stress disorder (PTSD) experience of the natural environment and nature-based activities (NBAs) in a 10-week nature-	NBT duration: 10 weeks, with sessions lasting 3 hours, three times a week. It contained mindfulness activities and applied mindfulness, NBAs and individual therapeutic sessions. NBT was facilitated by two psychology practitioners	Design: Qualitative.  Recruitment: study advertisements placed in daily newspapers, on websites tailored for soldiers and veterans, and through collaboration with the Danish military rehabilitation	N = 8.  Ages: 26–47 years.  All participants were war veterans with a diagnosis or symptoms of PTSD.	<ul style="list-style-type: none"> <li>Participants reported increased awareness of sensory experiences and bodily reactions.</li> <li>Participants felt safe, protected and accepted by nature.</li> <li>Preferences shifted from lone secluded spaces towards open locations with others' presence.</li> <li>Participants emphasised the importance of staff attitudes and the absence of pressure.</li> <li>The individualised approach of NBAs</li> </ul>	Strengths: <ul style="list-style-type: none"> <li>Good overview of existing research and a clear rationale for the study are provided.</li> <li>Clear recruitment pathway and inclusion criteria outlined.</li> <li>Reasons for participants drop-outs provided.</li> <li>Ethical approval was obtained, and considerations were addressed.</li> <li>Data analysis process described in detail.</li> <li>Provided visuals of the program supporting the reader in getting a sense of the program.</li> </ul>

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<p>in a forest therapy garden.  (Denmark)</p>	<p>based therapy (NBT) intervention.</p>	<p>and a gardener in a specialist-designed Danish university forest therapy garden and arboretum.</p>	<p>unit (convenient and purposive sampling).  Data collection:  Four semi-structured interviews, conducted at baseline, after 5 weeks, after 10 weeks and 1 year after the treatment.  Data analysis: Interpretative Phenomenological Analysis.</p>	<p>contributed to a sense of identity and belonging outside the military culture.</p> <ul style="list-style-type: none"> <li>• Participants experienced success in NBAs, enhancing their self-efficacy, which facilitated initiative and responsibility in daily life.</li> <li>• Knowledge about nature, acquired during therapy, enhanced veterans' fascination with nature.</li> <li>• Despite challenges, veterans used nature for restoration purposes after the intervention, indicating the lasting impact of NBT.</li> </ul>	<p>Limitations:</p> <ul style="list-style-type: none"> <li>• Researcher's epistemology, positionality and relationship to the study are not outlined.</li> <li>• Participants' ethnicity is missing.</li> <li>• Small number of participants may limit applicability to other veterans with PTSD, although there is variation in their personal characteristics.</li> <li>• Specialist design of forest therapy garden design may limit applicability in different settings.</li> <li>• Limited strengths, limitations and implications of the study provided.</li> <li>• No suggestions for future research provided.</li> <li>• Unclear whether the change is driven more by the nature-based elements or the psychological therapy element.</li> </ul>
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### Literature Quality Assessment and Critical Appraisal

In qualitative research, critical appraisal involves systematically and thoroughly examining research papers to determine trustworthiness, value, and relevance within a specific context (Burls, 2014). This SLR included three mixed-method studies but focused only on their qualitative aspects. Consequently, it was decided to appraise these qualitative elements alongside the remaining six qualitative papers using a single tool designed for this purpose. The Critical Appraisal Skills Programme (CASP, 2018) checklist for qualitative studies was employed to assess the quality of the final SLR studies, as detailed in Table 4. This ten-item tool aids in critically evaluating the quality and trustworthiness of qualitative research, evaluating its relevance, credibility, and rigour (CASP, 2018). Supported by a substantial evidence base in health-related research, the CASP tool is also considered an accessible option for novice researchers (Carroll & Booth, 2015; Noyes et al., 2018).

All papers attained sufficient moderate-high quality, so findings do not need to be cautiously approached. All nine studies had clearly stated aims, which is crucial for quality assessment as it sets the research's direction and scope, guides relevant questions, aids in evaluating whether the objectives were met, and assesses methodological appropriateness.

Most studies employed a qualitative methodology appropriate for exploring personal experiences and perceptions. Mixed methods, used by Corazon et al. (2018), McEwan, Collett, et al. (2022), and McEwan, Potter, et al. (2022), executed their qualitative components well.

Even though qualitative research does not follow conventional standards of generalisability (Guba & Lincoln, 2005), it remains crucial for such studies to consider the transferability of findings to broader populations and contexts. Most studies employed purposive or convenience sampling, enabling researchers to select participants who can provide relevant information, thereby enhancing the richness of the data. However, these methods can introduce selection bias and limit the representativeness of selected populations. For example, Lee and Son (2018) recruited participants from two specific areas, potentially limiting broader applicability. This study also lacked a clear

rationale and details on the recruitment pathway. Opportunistic sampling was used in McEwan et al. (2023) and McEwan, Potter, et al. (2022), which, while practical for quickly accessing specific groups, can also result in biased samples that may not represent the general population. Evans et al. (2023) lack sufficient information on the recruitment process, making it difficult to assess the potential for bias and the sample's representativeness. Sample sizes varied across the studies but were generally sufficient and fitting for qualitative methodologies, which prioritise depth over breadth, except for Corazon et al. (2018), which had a particularly small sample size, limiting the transferability and richness of data.

The data collection methods across the studies generally addressed the research objectives effectively, using semi-structured interviews and focus groups to gather in-depth qualitative data suitable for exploring participants' experiences and perspectives. Additionally, Evans et al. (2023) conducted field observations of FB sessions, providing direct insights into participant behaviours and interactions, though this could introduce observer bias. McEwan, Collett, et al. (2022) collected data via brief written feedback, which is quick and efficient for capturing immediate reactions but lacks the depth and nuance of in-depth interviews or focus groups. In contrast, McEwan et al. (2023) employed a robust data collection method using real-time transcripts and follow-up surveys, allowing for immediate and longitudinal insights into participants' experiences.

Most studies did not explicitly state an epistemological stance, positionality, or relationship to participants, nor incorporate reflexivity, affecting qualitative data's transparency, interpretation, and trustworthiness. However, Duffy et al. (2020) and McEwan, Collett, et al. (2022) were exceptions, sharing their positionality and connection to participants, though they lacked details on epistemological stance and reflexivity examples. McEwan, Potter, et al. (2022) discussed reflexivity without outlining philosophical standpoints, which undermines the depth of reflexivity claims, and Evans et al. (2023), although the only study to state their epistemological stance and outline

reflexivity processes, did not provide sufficient details on how these influenced their research, leaving scope for improvement in transparency and thoroughness.

Most studies obtained ethics approval and outlined their ethical processes, but some lacked detailed information on ethical considerations. Corazon et al. (2018) and Lee and Son (2018) did not mention participant debriefing. Lee and Son (2018) and Lee et al. (2019) did not discuss managing potential conflicts and discomforts during focus groups. Additionally, Lee et al. (2019) did not clarify how confidentiality was maintained during interviews conducted in a public café. Such omissions could impact participant protection and perceived ethical rigour and integrity.

Most studies employed appropriate and rigorous data analysis methods and clearly outlined their analytic procedures, enhancing transparency and replicability. Corazon et al. (2018) used Content Analysis (Krippendorff, 2018), which was appropriate for examining participants' experiences; however, the small sample size limited the depth of analysis and Interpretative Phenomenological Analysis (IPA; Smith & Osborn, 2003) may have been more appropriate. Evans et al. (2023) used Reflexive Thematic Analysis (RTA; Braun & Clarke, 2019), which was suitable for capturing the depth of participants' lived experiences. However, including reflexivity statements could have mitigated observer bias and improved analysis. Additionally, they could have provided more evidence and examples to support data interpretations. Lee et al. (2019) used Grounded Theory (GT; Charmaz, 2006) to generate a theory from participants' experiences effectively, but the long gap between intervention and interviews posed a recall bias risk, and member checks or follow-up interviews could have improved the reliability of findings. McEwan, Collett, et al. (2022) did not explicitly name their qualitative data analysis method despite outlining some details of the analytical process, which undermines the transparency and replicability of the study, making it difficult for other researchers to fully understand or validate their analytical approach.

Most studies provided clear statements of findings and linked them with research aims, which enhances transparency and facilitates understanding. As detailed in Table 4, all studies offered

valuable research, clearly outlining their contributions and future recommendations, emphasising the need for additional research to confirm and expand upon findings. However, Poulsen et al. (2016) did not provide future recommendations, which limits the direction of future studies. Additionally, Corazon et al. (2018) and McEwan, Collett, et al. (2022) did not discuss how findings could be transferred to other populations, which restricts their research's potential impact and usefulness across diverse settings.

Finally, it is important to note that, as evident across these studies, varying terminologies used to describe FB in research and varied program set-up and length are limitations in this field. This can create inconsistencies, hindering the comparability and synthesis of study results and complicating efforts to establish standardised guidelines and practices in FB.

**Table 4**

*Critical Appraisal of Included Studies Using CASP (2018) Criteria*

	Yes = criteria met	1. Was there a clear statement of the aims of the research?	2. Is a qualitative methodology appropriate?	3. Was the research design appropriate to the aims of the research?	4. Was the recruitment strategy appropriate to the aims of the research?	5. Was the data collected in a way that addressed the research issue?	6. Has the relationship between the researcher and participants been adequately considered?	7. Have ethical issues been taken into consideration?	8. Was the data analysis sufficiently rigorous?	9. Is there a clear statement of findings?	1. How valuable is the research?
Corazon et al. (2018)	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	<ul style="list-style-type: none"> <li>This unique study focuses on exploring the feasibility of Nature-Based Therapy (NBT) for treating Binge Eating Disorder (BED)</li> <li>Recognition of NBT's potential to enhance therapy accessibility and sustainability.</li> <li>Future studies could validate these findings through testing in a broader randomised sample.</li> <li>Forthcoming interventions could incorporate aspects of diet and weight loss.</li> <li>Future studies should compare ACT indoors (as a control group) to ACT-based NBT outdoors.</li> <li>The study did not discuss how the findings could be transferred to other populations.</li> </ul>	
Duffy et al. (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	<ul style="list-style-type: none"> <li>The first study to explore nature-based activities in counsellor education.</li> </ul>	

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										<ul style="list-style-type: none"> <li>• Examined impacts on interpersonal and intrapersonal levels and implications for counsellor development.</li> <li>• Findings suggest integrating nature-based activities into the curriculum for student well-being.</li> <li>• Future research could explore nature's role in counsellor training across contexts.</li> <li>• Future studies could quantify variables influencing activity effectiveness and impact on self-care and practice.</li> <li>• Further investigation is needed on integrating nature in counselling, including ecotherapy's effect on client outcomes.</li> </ul>
Evans et al. (2023)	Yes	Yes	Yes	Can't tell	Yes	No	Yes	Yes	Yes	<ul style="list-style-type: none"> <li>• The first study to investigate Forest Therapy (FT) as a supplement to psychotherapy within an Australian setting.</li> <li>• Supports FT as complementary to traditional mental health support.</li> <li>• Extends understanding of FT's benefits for mental health consumers.</li> <li>• Future studies could ensure the representation of diverse mental health conditions.</li> <li>• Future research should compare outcomes between FT and psychotherapy alone.</li> <li>• Future studies could help us understand how FT could culturally align to support Indigenous groups' engagement in psychotherapy.</li> <li>• Future studies could explore longer-term outcomes of FT.</li> <li>• Clinicians may explore Forest Therapy as an adjunct to mindfulness-based approaches to enhance therapeutic benefits.</li> </ul>

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Lee & Son (2018)	Yes	Yes	Yes	Can't tell	Yes	No	Can't tell	Can't tell	Yes	<ul style="list-style-type: none"> <li>• Research provides strategies for dementia prevention.</li> <li>• The study proposes urban forest therapy to lessen the government's financial burden by enhancing the self-health management of elderly people.</li> <li>• Future research could focus on human-centred green welfare services for low-income elderly living alone.</li> <li>• Future research could explore welfare network examples for other vulnerable groups applicable to dementia patients locally.</li> </ul>
Lee et al. (2019)	Yes	Yes	Yes	Can't tell	Yes	No	Can't tell	Yes	Yes	<ul style="list-style-type: none"> <li>• The study highlights the potential of urban forests as restorative environments for mental health.</li> <li>• Offers essential information to policymakers regarding using urban forests as health resources.</li> <li>• Provides insights into the process of psychological restoration through nature-human interaction.</li> <li>• Acknowledges limitations, such as the small sample size and specific regional context, ensuring transparency in the study's scope and transferability.</li> <li>• Suggests that well-designed, personalised programmes are essential to maintain the effects of forest therapy and accommodate participants' psychological changes.</li> <li>• Future research should investigate diverse demographic groups to tailor forest therapy initiatives to participants' requirements.</li> </ul>

McEwan, Collett, et al. (2022)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Yes	<ul style="list-style-type: none"> <li>• This is the first study examining how virtual nature affects individuals with Long-COVID who face mobility limitations, focusing on anxiety, social connection and self-reported symptoms.</li> <li>• The study demonstrates the feasibility of implementing such accessible interventions and suggests that they can improve health, well-being, and social outcomes among individuals with long-COVID.</li> <li>• Future interventions should focus on improvements in social connection in long-COVID patients.</li> <li>• Future studies should adapt recruitment methods to this specific patient population.</li> <li>• Future studies should offer flexibility around session dates and times to reduce dropouts due to physical health reasons.</li> <li>• Subsequent studies should strive to gather data over an extended period to evaluate the sustained effects of virtual nature.</li> <li>• Upcoming sessions should promote ongoing social interaction between participants.</li> <li>• No discussion of the applicability of findings to other populations mentioned.</li> </ul>
McEwan, Potter, et al. (2022)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	<ul style="list-style-type: none"> <li>• Most prior research explored the effectiveness of forest bathing for adolescents in the wilderness. The study showed that forest bathing in urban settings can significantly enhance nature connection and overall well-being among adolescents.</li> <li>• The findings suggest that various institutions like schools, youth groups, and charities could implement or recommend</li> </ul>



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										<p>urban forest bathing to enhance nature connection and well-being among young people.</p> <ul style="list-style-type: none"> <li>• Future research should strive to enlist a broader range of participants.</li> <li>• The interviews in future studies should incorporate encouragement, open-ended queries, or prompts to overcome the self-consciousness of the adolescent participants.</li> </ul>
McEwan et al. (2023)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	<ul style="list-style-type: none"> <li>• The study offers valuable insights, providing qualitative data describing the effectiveness and lasting benefits of a virtual forest bathing program for individuals with mobility impairments and/or low energy.</li> <li>• The paper provides a distinctive assessment of a programme conducted by facilitators who are themselves people with disabilities and possess firsthand experience with impairments linked to chronic illness, injury, or ageing.</li> <li>• The use of mirror neurons has not been implemented in a virtual forest bathing program before, making the discovery of its effectiveness distinctive and potentially beneficial for future investigation of virtual forest bathing.</li> <li>• The study highlights the need for policymakers and program developers to consider the access of people with mobility impairments to natural environments and nature-based programs.</li> <li>• Future studies could explore whether nature connection programming tailored to the needs and comfort of marginalised</li> </ul>

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Poulsen et al. (2016)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	populations, using peer support or affinity group approaches, yields similar benefits.	<ul style="list-style-type: none"> <li>• This research provided a more profound understanding of the veterans' experiences of natural environments and Nature-Based Activities (NBAs) since the research in this area is limited.</li> <li>• The study highlights how nature can serve as a therapeutic environment for veterans with post-traumatic stress disorder and that incorporating nature in therapy can have a positive effect.</li> <li>• The study underscores the importance of individualised approaches in therapy, such as the NBAs, which were tailored to the participants' needs and preferences.</li> <li>• The challenges of incorporating NBAs into daily life post-intervention highlight the importance of facilitating the transition from therapy to independent engagement with nature.</li> <li>• The study lacks discussion on study implications and future research recommendations.</li> </ul>
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## **Synthesis Method**

Thematic synthesis (Thomas & Harden, 2008) was used to synthesise information from the final nine papers. This method was specifically developed and applied for systematic reviews focusing on individuals' perspectives and experiences, making them suitable for the current review. After familiarisation with the articles, I extracted findings from each study and entered them into NVivo software (Lumivero, 2023). While Thomas and Harden (2008) classify only the results section as findings, I also reviewed the discussion sections due to the small number of final papers in this SLR to capture any additional relevant information. I read each extract twice to familiarise myself with the content and identify relevant information to answer the SLR question, which was then coded. These codes were grouped into descriptive themes and refined into analytical themes, with the detailed progression outlined in Appendix B. I engaged in first-order interpretations by analysing direct quotes and raw participant data. This was followed by second-order interpretations, where I considered the paper authors' analyses. Finally, I performed third-order interpretations, involving my synthesis and interpretation of the meaning-making processes described in the papers (Gioia et al., 2013; Walsh et al., 2015).

## **Synthesis Findings**

The thematic synthesis process resulted in five analytic themes discussed below:

1. Connectedness Cultivates Well-being and Self-Care.
2. Building a Nurturing Community in Nature's Embrace.
3. Deepening Natural Interconnections and Spiritual Awareness.
4. Personal Discovery and Growth.
5. Enhancing Safety, Accessibility, and Inclusivity.

**Theme 1: Connectedness Cultivates Well-being and Self-Care**

This theme captures the profound impact of connecting with nature, oneself, and the community through FB, highlighting how these connections enhance physical and mental well-being: *“Relationships are important to human beings as they provide beneficial effects on health and well-being”* (Lee & Son, 2018), and promote self-care practices.

Forming a relationship with nature that offers *“consistency”, “predictability”,* and a *“peaceful and calming”* environment was found to have a particularly profound effect in helping people self-regulate (Evans et al., 2023). Participants shared feeling relaxed in nature: *“I felt relaxed and cleansed when I was lying down in the forest with my eyes closed”* (Lee et al., 2019) and felt that it provided them with a *“place of recovery”* from stressful life contexts outside the sessions (Poulsen et al., 2016). Engaging in FB activities seemed to have a similarly calming effect: *“I could feel my shoulders drop during the activities, and I was able to let out a deep breath”* (Duffy et al., 2020).

Such relaxation was shown to facilitate pain relief: *“... I had pain in my knee... but the program was just so soothing and relaxing... I noticed less pain than when we began”* (McEwan et al., 2023). Additionally, nature supported the healing of the physical body: *“I had a digestion problem. Even though I just visit the mountain once in a week, I can experience a huge effect...”* and poor physical health motivated people to return to nature’s healing embrace (Lee & Son, 2018).

As a result, literature shows participants experiencing *“a sense of reduced negative emotions such as anxiety and tension”* (Lee et al., 2019), reduced worry and rumination *“my brain wasn’t going 50 miles per hour”* (Duffy et al., 2020), an increase in positive emotions and happiness (e.g., McEwan et al., 2023), and improved general well-being through FB (e.g., Evans et al., 2023).

Studies showed that feeling the benefits of FB reminded participants of the importance *“to spend more time on self-care”* (McEwan et al., 2023), strengthening their connection to themselves. Consequently, participants reported an increased motivation to *“acquire healthy lifestyle habits”*

(Lee & Son, 2018), such as *“spend time outdoors and become physically active”*, alongside an increased ability to tackle daily life responsibilities (Evans et al., 2023).

FB programs were shown to provide participants with the necessary skills in utilising nature to support their self-care efforts: *“Much of what we talk about is... how to utilise our own strengths, ways to really care for ourselves in such a powerful way... we can reutilize these [mindful nature connection] strategies”* (McEwan et al., 2023).

These connecting experiences seemed to mitigate the adverse effects that isolation was shown to have on reduced motivation to self-care: *“the burden of taking all their meals alone and the decreased motivation resulted in dietary nutritional deficiencies”* (Lee & Son, 2018).

### ***Theme 2: Building a Nurturing Community in Nature’s Embrace***

This theme illustrates the role of FB group sessions in fostering strong community ties with nature’s aid, providing facilitator and peer support, and offering an accepting and compassionate environment where participants feel a deep sense of belonging.

Studies demonstrated that FB group sessions facilitate the building of strong community bonds with other group members: *“The activities build a lot of camaraderie when you’re outside like that together”* and *“a deep sense of belonging to community and the earth”* (Duffy et al., 2020). The natural setting seemed to facilitate community connection: *“helps you interact with other classmates because you’re not just that person who sits in that seat over there. It’s like now we’re next to each other by the water”* (Poulsen et al., 2016).

Receiving peer support (Lee et al., 2019) and sharing similar experiences with other people in FB groups was crucial, as it helped participants feel *“like equals”* and that there was *“no judgment”* (Evans et al., 2023). Participants also appreciated connecting to FB facilitators and getting to know them on a *“more humanistic level”* (Duffy et al., 2020). These elements further enhanced a *“sense of common humanity and belonging”* (McEwan et al., 2023).

Additionally, feeling included and accepted by the community with no one attempting to “fix” them felt particularly important for the groups of people who often experience the opposite approach in society, like PWDs (McEwan et al., 2023) or mental health difficulties (Evans et al., 2023). This allowed participants to feel safe and be their authentic selves: *“I feel I can be fully myself because the community is so accepting”* (McEwan et al., 2023). In return, participants were able to adopt an *“attitude of acceptance”* towards others (Lee et al., 2019) and develop a *“greater compassion for themselves and others”* (Evans et al., 2023).

The natural environments were also shown to facilitate participants’ feeling accepted *“just the way you are”* as it placed *“no demands and expectations to you”* and modelled that imperfections, changes through time and *“being on its own terms”* are natural (Poulsen et al., 2016). Mirroring oneself in natural objects and identifying with the principles of nature acted as a reminder that *“they too were a part of nature”*, which further cultivated *“self-acceptance”* and acceptance of *“challenges in their past and present”* (Evans et al., 2023).

Overall, the literature showed that building such connections with others in nature helped participants *“reduce feelings of isolation and loneliness”* (McEwan, Potter et al., 2022) and increased their *“desire for connection with the larger community”* (Lee & Son, 2018). Consequently, participants preferred to engage in FB as a group rather than alone and wished to receive support in maintaining these relationships beyond the program (Lee & Son, 2018).

### ***Theme 3: Deepening Natural Interconnections and Spiritual Awareness***

This theme captures how mindful presence practice in FB deepens participants' relationships with nature, enhances their spiritual awareness, and fosters a sense of interconnectedness with the natural world.

Studies captured that FB *“allowed participants to slow down and connect with nature”* (Evans et al., 2023) and develop meaningful relationships with natural objects and locations: *“I*

*developed a relationship with the tree. It was my anchor*" (Lee & Son, 2018). They felt grounded in nature's presence (Corazon et al., 2018) and found joy in engaging in nature activities: *"It was fun, creative"* (McEwan, Potter, et al., 2022). Learning about nature motivated their engagement (Poulsen et al., 2016), as they *"enjoyed nature more when they knew more about it"* (Lee et al., 2019). This cultivated participants' awareness of the benefits of nature: *"Trees are beautiful, they keep us alive, they do so much for us"* (McEwan, Potter, et al., 2022), which led to an increased appreciation and gratitude for the natural world (Duffy et al., 2020). Participants expressed a desire to spend more time immersed in natural settings outside the programs: *"I will try to incorporate nature in my life"* (McEwan et al., 2023) and encourage others to connect to nature too: *"As a counsellor, my plan is to start giving clients homework to just go outside and see if it helps them"* (Duffy et al., 2020).

Mindfulness practice played a crucial role in deepening participants' connection to nature by increasing present focus, *"gets me out of my head"* and *"tuning in the senses"* (Evans et al., 2023). Connecting with the present moment was seen as essential for genuinely noticing nature's beauty: *"If a deer comes by, then it's now! You see, it won't happen again, so if you want to enjoy it, then you must have your attention focused on the right here, right now"* (Poulsen et al., 2016), capturing small details of the natural world: *"I noticed webs covered with raindrops... it was brilliant"* (McEwan et al., 2023), and increasing participants' awareness of their natural surroundings: *"I think we just kind of like walk past [nature] and we kind of ignore little things. And being asked to pay attention to it ... we all realize things we've never seen before"* (Duffy et al., 2020).

Similarly, mindful focus on one's senses deepened participants' connection to nature: *"Touching plants, using more of my senses in nature"* (McEwan et al., 2023). Natural elements seemed to facilitate a connection to presence and sensory experiences, which may be more challenging indoors: *"When you do awareness exercises in nature, you experience the sunshine, the smell of the grass, you feel the ground, so you are not caught in the swarm of your own thoughts."*

*The surroundings carry you with them, you are in the world and not in a confined room”* (Corazon et al., 2018). Poulsen et al. (2016) found that such sensory experiences *“revived sensory functions that had been desensitized during their daily lives”*. This was particularly significant for PWDs who would otherwise engage in sensory suppression: *“Say you have chronic pain all the time... so the only way to get through sometimes is to submerge it... So it’s a brand-new experience to really open up to everything and be truly present and accepting of whatever is going on”* (McEwan et al., 2023).

Moreover, studies showed that engaging in a mindful connection with nature led participants to feel the *“interdependence between people and between people and nature”* (Corazon et al., 2018) and to *“understand the interconnectedness of all elements in the environment”* (Evans et al., 2023). Feeling a part of *“something greater than themselves”* reduced disconnection and loneliness (Evans et al., 2023) and giving back to nature was seen to enhance the *“feeling of coherence with nature”* (Poulsen et al., 2016).

Some participants also shared developing a perception of nature as a living being: *“Having a conversation with a tree was enlightening”* (McEwan, Potter, et al., 2022) and feeling *“a strong sense of awe and curiosity about nature”* (McEwan, Collett, et al., 2022). Others expressed that nature facilitated a connection to something they referred to as *“the spiritual”* or a *“higher power”* (Duffy et al., 2020), thus further enhancing the feelings of interconnectedness.

#### ***Theme 4: Personal Discovery and Growth***

This theme illustrates how engaging in FB activities supports personal discovery and growth by enhancing self-awareness, facilitating self-reflection, and boosting self-confidence and self-esteem.

Studies found that mindful presence detailed in the last theme not only increased participants’ awareness of their surroundings but of their internal *“physical, emotional, and cognitive states”* (Duffy et al., 2020), cultivating an increased *“connectedness with self through*



*immersion and fulfilment*" (Lee & Son, 2018). Similarly, the ability to open themselves to others in an accepting community and nature, as discussed in the second theme, helped participants to *"identify their true selves"* and *"recover their self-identity"* (Lee et al., 2019). Additionally, participants shared that FB activities allowed them to reconnect to their inner child: *"I just got to be a kid again"* (McEwan, Potter et al., 2022) and childhood experiences: *"I see a lot of trees and squirrels here and they make me remember my old days and make me feel good. Playing some childhood games such as tossing pine-cones or tree sticks makes me feel like I am revisiting my past days."* (Lee & Son, 2018). All these experiences supported participants' personal discoveries.

Participants' self-discovery was further facilitated by FB sessions *"providing mental space"* and increasing capacity to self-reflect: *"this meditative state, where you were able to process everything better"* (Corazon et al., 2018). As a result, participants shared *"gaining new perspectives, coming to realizations about their lives, and being able to process difficult emotions"* (Evans et al., 2023). Through such processes, participants could gain clarity on their preferences and come closer to acting on their values, thus staying true to themselves (Duffy et al., 2020).

Furthermore, participants experienced growth in self-confidence and self-esteem through engaging in various aspects of FB. These included forming ties with the FB community, learning about nature (Lee et al., 2019), and gaining new coping skills to manage daily stress: *"I've gone back to the [nature] video a couple of times and watched it when I was feeling stressed—it gave me a really good resource that was helpful"* (McEwan et al., 2023). For counselling students, increased *"academic performance"* was another source of confidence, as the natural environment supported their learning: *"I think that [in nature] is where I really... learn more effectively because nature is very wide open and promotes learning"* (Corazon et al., 2018). Additionally, deeply connecting with FB facilitators encouraged *"appropriate risk-taking, such as examining one's own biases and triggers or trying novel interventions"* (Corazon et al., 2018). Similarly, observing other group members try new FB activities inspired confidence: *"Well, if they can do it, I certainly can"* (Evans et al., 2023).

**Theme 5: Enhancing Safety, Accessibility, and Inclusivity**

This theme captures the importance of providing safe, accessible, and inclusive FB environments, ensuring all participants benefit from the practice regardless of physical or logistical challenges.

Participants found that natural FB environments offered this much-needed “*safe space*” (Lee & Son, 2018) that felt “*protective*” and provided “*a feeling of refuge*” (Corazon et al., 2018). One participant illustrated this by saying, “*Here, I can sit shielded from people looking into the garden. I can see the field, and I have ... a kind of backing here*” (Poulsen et al., 2016). Additionally, Evans et al. (2023) compared nature environments to “*a safe haven*” from which participants were able to explore the world: “*This feels like home*”. The feeling of safety was further enhanced through the caring and compassionate guidance received from the FB facilitators: “*In fact, the guided nature of the program was felt to be essential to letting go, building confidence and experiencing nature in a safe way... Sometimes I need to have someone else guide me*” (Evans et al., 2023). Feeling safe resulted in “*a sense of alert relaxation, which enabled participants to let go and explore the environment and subsequently, themselves*” (Evans et al., 2023). This is illustrated by Poulsen et al. (2016), who observed that after a few weeks of FB, veterans “*began testing different locations*” and chose “*less sheltered*” spaces and that “*their need for being alone had changed and the preferred location with other peoples’ presence, especially other veterans, was important*”. Such openness benefits participants in various ways, as discussed in themes three and four.

Despite the many benefits offered by FB, participants identified that there could be obstacles in accessing such programs, for example, “*lack of publicity about the program*” or “*inconvenience of access*”, especially for PWDs: “*The elderly who are not healthy cannot come here alone*” (Lee & Son, 2018). Thus, the need to improve accessibility was highlighted. Online FB offered one possible solution to increasing accessibility to nature: “*Having it online is important. Everybody sometimes can’t go out*”, with visualisation practises supporting sensory engagement: “*You can lay*

*on the bed, and you don't have to get to the river or the forest. You can imagine it and picture it in your mind, which is really powerful"* (McEwan et al., 2023). However, this study also revealed that sensory visualisation can evoke complex emotions, such as a combination of gratitude and grief, for PWDs who may no longer access certain sensations physically: *"This program was a reminder of all the beautiful moments I've experienced in my life. It made me grieve what I can't do anymore, but made me grieve in a good way, and made me think of ways I can still enjoy nature"*.

Offering individual adaptations was equally crucial in ensuring equal participation. Participants advocated for *"numerous ways of 'being and doing'"* FB (Poulsen et al., 2016), suggesting facilitators *"provide variety in that way, in both the type of activity as well as the scale and size of the groups and how that is offered"* (Duffy et al., 2020). Participants also appreciated being given choice and permission to modify FB activities according to their own needs and find *"their own ways to meaningfully connect with nature"* (McEwan et al., 2023), which fostered a sense of agency: *"the bird boxes we are working on. It's our own decision whether we finish them or not... if we need to rest instead, it's totally okay here"* (Poulsen et al., 2016). Finally, not all delivery formats suited all participants, with some commenting that facilitators should have instructed people to *"leave their phones and smart devices behind"* (Duffy et al., 2020), as these brought distractions and hindered connections with others and nature.

### **Conclusions of the Systematic Literature Review**

This SLR synthesised the findings from nine empirical studies to explore the question: "What does the qualitative literature tell us about people's experience of connectedness through forest bathing?" Five themes were generated that shed light on this question. Collectively, these themes capture the profound impact that different elements of FB, including the safety of nature itself, supportive facilitators and peers, and sensory mindfulness practises, can have in helping participants build nurturing connections to the authentic self, others, and nature, ultimately leading to a sense of interconnectedness between all beings and something greater. These themes encapsulate that such

connections result in improved well-being, increased self-confidence, motivation, introspection, and self-care, enhanced sensory and presence attunement, openness to the world, interpersonal compassion and acceptance, a deep sense of belonging, and reduced isolation, particularly for those marginalised by society, such as PWDs or mental health issues. Moreover, the need to improve accessibility to FB programs and offer inclusive individual adaptations was highlighted to ensure this practice is available to all.

Although SLRs are often regarded as the 'gold standard' for presenting evidence (Haddaway et al., 2017) and the insights provided in this SLR contribute to a better understanding of people's experiences of connectedness through FB, the small amount of qualitative research available can only provide a limited understanding. The papers also offer a narrow representation of populations that may benefit from this practice. Thus, many uncertainties remain.

### **Gaps in the Literature and Rationale for the Current Research**

Despite the growing body of research on FB, qualitative research in this field is sparse, and more knowledge of people's experiences of this intervention is needed. This indicates significant potential for current and future qualitative research. Although the nine papers reviewed in this SLR discussed some experiences of connectedness through FB, none investigated it as a primary focus. This is with a partial exception of McEwan, Collett, et al. (2022) study, which included an exploration of the feasibility of online FB in improving social connections and McEwan, Potter, et al. (2022) study, which included an investigation of whether urban FB improves nature connection. Given the various benefits connectedness to nature, others, and oneself can bring, understanding people's experiences of this in-depth is necessary. Additionally, only two papers focused on FB experiences among PWDs (McEwan, Collett, et al., 2022; McEwan et al., 2023). Considering the isolating challenges often faced by this population, detailed in the Introduction, accessible FB shows the potential to mitigate these, as evidenced in the literature overview in the Introduction and the synthesis of studies included in this SLR.

Therefore, it is crucial to conduct further research on the experiences of PWDs to understand better and enhance the benefits of FB for this group. Gaining these insights is vital to reducing societal and environmental exclusion and isolation often experienced by PWDs. It also helps guide necessary modifications in clinical practice to make FB and other nature-based interventions more accessible and beneficial for diverse populations. Furthermore, these findings could inform governmental policy changes, such as increasing funding for accessible natural spaces and integrating accessible nature-based therapies into public health initiatives, thereby promoting inclusivity and well-being. It is, thus, essential to fill this knowledge gap and amplify the voices of individuals with PWDs.

### **Aims of the Research and Research Questions**

This research aimed to conduct a qualitative exploration of PWDs' experiences of change in connectedness through FB. This was explored through the following question:

What are the people with disabilities' experiences of change in their sense of connectedness through forest bathing?

Three further sub-questions were explored:

1. What are the people with disabilities' experiences of change in their sense of connectedness to the self through forest bathing?
2. What are the people with disabilities' experiences of change in their sense of connectedness to others and the community through forest bathing?
3. What are the people with disabilities' experiences of change in their sense of connectedness to nature through forest bathing?

## Chapter 3: Method

### Chapter Overview

This chapter outlines the method used to answer the research questions. It starts with the EbE consultation that shaped the study, details the FB intervention (i.e., EcoWisdom Accessible Nature Well-being Program) completed by participants, and explains the rationale for adopting a CR epistemological position, qualitative design, RTA, and semi-structured interviews. Information on participants, recruitment, data collection, storage, analysis, ethical considerations, and quality appraisal of the study are also presented.

### Expert by Experience Consultation

Involving EbE consultation is essential to ensuring that research is conducted 'with' people and not 'on' people (Reason, 1994). As an outsider researcher, there were limitations in my knowledge and errors I was likely to make without the consultants' support. I wished to prevent causing harm or stress to participants. Additionally, Videmšek (2017) suggests that research completed in collaboration with people representing the studied population feels more meaningful and trustworthy to the participants. Thus, engaging consultants throughout the research process was ethically appropriate and ensured that this project was delivered with care, that participants' needs were considered, and that their voices were centred throughout the research process.

Two EbE from the EcoWisdom organisation in Canada volunteered as consultants for this study. They were recruited via email through the secondary supervisor, who had existing contact with the organisation. Both are White Canadian females, certified FB guides within EcoWisdom and have practised FB themselves. Moreover, both have physical health difficulties and/or limited energy.

Both consultants supported this research within their abilities throughout the process. Their contributions are outlined in Table 5. Together, we completed a consultation agreement outlining our responsibilities and a conflict resolution plan (Appendix C). In alignment with the University of

Hertfordshire (UH) regulations, I obtained additional funding to compensate the consultants £20 per hour for their time and energy. This aligns with the School of Life and Medical Sciences (LMS) Policy on Payments to Research Volunteers and Lay Participants. The funds were necessary to compensate their support workers, aiding their daily activities, while consultants used their limited energy resources to support this research. I aimed to show meaningful gratitude, facilitate their involvement, and provide an accessible path from consultation to collaboration. Compensation also helped reduce the power imbalance, ensuring their knowledge and resources were not exploited. It was considered ethical to fully engage consultants throughout the research and remove barriers to their collaboration.

**Table 5***Consultants Contribution*

Research Stage	Consultants' Contributions to Research Activities
Methodology	<ul style="list-style-type: none"> <li>• Support with establishing and verifying the research questions and the interview schedule. Providing reflections on potential respondents' experience with the interview questions.</li> <li>• Advise on verbal and written language used in this research.</li> <li>• Feedback on research design.</li> <li>• Advise on necessary considerations when approaching and communicating with people with disabilities.</li> <li>• Advise on accessibility needs and adaptations that may be required for people with disabilities.</li> <li>• Advise on other ethical considerations.</li> <li>• Review and feedback on photographs, consent forms, and support with obtaining consent.</li> </ul>
Recruitment	<ul style="list-style-type: none"> <li>• Review and feedback on recruitment materials (e.g., poster).</li> <li>• Support with participant recruitment by approaching participants using their organisational network and contacts.</li> </ul>
Analysis	<ul style="list-style-type: none"> <li>• Rich discussions and reflections about connectedness and disability, which encouraged further reflexivity.</li> <li>• Review and feedback on coding, themes and sub-themes.</li> <li>• Review and feedback on member reflections' materials and participant feedback.</li> </ul>
Write-up	<ul style="list-style-type: none"> <li>• Review and feedback on all thesis chapters.</li> </ul>
Dissemination	<ul style="list-style-type: none"> <li>• Setting up the meeting with the EcoWisdom guides, at which the findings of this research will be co-presented with the consultants on July 6, 2024.</li> <li>• Consultants expressed interest in supporting future publications and dissemination of the study. This may involve collaborative writing, co-authorship, and co-presenting research findings.</li> </ul>

## **Forest Bathing Intervention**

### ***The EcoWisdom Organisation***

Besides a small number of private individual FB practitioners, EcoWisdom is the only organisation the research team is aware of which offers FB programs and nature guide training designed to be led by and accessible to PWDs, chronic illnesses and age-related pain or fatigue, who may encounter access or other equity challenges and isolation. Additionally, EcoWisdom offers public talks and education on the science of FB. Its core values are connection and care. EcoWisdom supports community empowerment and promotes social and environmental justice, using the SMD (Bingham et al., 2013; Shakespeare, 2006) as its foundational philosophy and Disability Justice lens (Jampel, 2018) to practise inclusivity and acknowledge power differentials. These are described in the Introduction. It also incorporates embodiment practises, which the SMD often fails to acknowledge.

EcoWisdom Forest Preserve, where online FB sessions occur, is located on the traditional and unceded territory of the Algonquin People. This 200-acre preserve features a river, streams, wetlands, and forests, with wild-roaming moose, deer, and wolves. EcoWisdom founders reside here off-grid, modelling place-based attachment and conservation, acknowledging EcoWisdom guest status on this land, and implementing land stewardship and decolonisation through its programs. The in-person FB sessions take place in accessible parks across Canada.

### ***Accessible Nature Well-being Program***

The Accessible Nature Well-being Program (ANWP) integrates FB, mindfulness and peer support, positioning itself as a community-driven alternative to conventional therapy. The Program takes place 5-6 times a year, lasting for 2.5 hours and supports a group of 25-40 participants with a team of five FB guides present. The guides are trained in FB, mindfulness and contemplative practices. The online and onsite program operates under a co-facilitative, peer-led model where



everyone contributes as both participant and guide, thereby enhancing the collective experience. The program aims to enhance human connection to nature, promoting balance within individuals, their communities, and the earth's ecosystem.

Prior to each session, the facilitation team helps prepare participants with a tip sheet, which provides details on how to connect with nature using elements like houseplants, an open window, a garden, or other natural surroundings and explains the mindful, non-judgmental communication style adopted during the program. Additionally, participants are sent an infographic document outlining the benefits of FB to encourage engagement. ANWP sessions typically begin with a land acknowledgement and honouring the Indigenous peoples for their stewardship of the land. Participants then introduce themselves, mentioning their names, geographic location (for online sessions), and current interaction with nature. This is followed by an overview of FB and the program itself and a nature poem. Tailored embodiment (or mindful movement) exercises are then introduced. These exercises offer various adaptations to suit different abilities and mobility levels, such as synchronising upper body movements or eye movements with breathing or engaging in visualisation exercises. Three guided nature-connection invitations follow:

1. Slowing down and opening the senses together with a soft gaze.
2. Nature-based meditation connecting participants to natural elements.
3. Deeper engagement with nature through practices such as giving and receiving metta (i.e., loving-kindness) with a tree or quiet contemplation in nature (e.g. considering what nature is 'calling out to the individual').

During online sessions, participants are invited to customise these nature-connection activities according to their comfort and needs. This includes watching nature images and videos online, interacting with nature items nearby (e.g., houseplants or gazing out a window), or going outside onto a balcony or garden. In-person sessions include connecting to the current natural surroundings. Sensory exercises or mindfulness may be challenging for some PWDs who have

reduced sensory function related to neurological impairments. Interventions must, therefore, be inclusive by making sensation-focused language adaptations and validating sensory presence and sensory absence equally (Finlay, 2022). To enhance the immersive experience, nature videos and photographs featuring sights and sounds from the EcoWisdom Forest Preserve are incorporated. These include specific sensory inputs, such as placing hands on bark or feet in moss, to activate mirror neurons, supporting those with significant mobility impairments, paralysis, or sensory impairments. When a person observes another individual perform an action, such as touching moss, the same neurons that fire in the brain of the person performing the action are activated in the observer's brain (Berrol, 2006).

Following each nature-connection activity, participants are invited to share their experiences using contemplative communication principles. EcoWisdom defines contemplative communication as deeply listening, mindfully observing, and witnessing each other's experiences with curiosity and acceptance. This practice allows individuals to share without judgment, comparison or attempts to offer solutions, creating a supportive space. This approach is considered vital, given the frequent medical and therapeutic interventions many participants face, including assessments for mobility and communication aids. The program ends with a closing group ritual, such as a tea ceremony conducted online or creating a mandala in person, and participants are encouraged to share concluding reflections. A week after each session, participants receive encouragement and suggestions for connecting with nature, including a video link or an audio meditation and mobility modifications to support individual practice.

Figure 2 provides example photographs from the in-person ANWPs, while Figure 3 presents visual examples used in the online sessions. Written consent for these unpublished photographs was obtained from both the photographers and the participants (see Appendices D and E for consent form templates).

**Figure 2**

*Moments from the In-person Forest Bathing Sessions*



*Note.* Receiving Loving-kindness from a Tree, by A.B., Youssef, 2022, Bear Creek Park, British Columbia.



*Note.* Delight in Shared Nature Connection, by L. Goodings, 2023, Bear Creek Park, British Columbia.

**Figure 3**

*Visual Examples from the Online Forest Bathing Sessions*



*Note.* The Softness of Moss, by K. Krogh, 2021, EcoWisdom Forest Preserve, Maynooth, Ontario.



*Note.* Light and Colour of the Spring Forest, by K. Krogh, 2021, EcoWisdom Forest Preserve, Maynooth, Ontario.

## **Design**

### ***Epistemological Stance***

As outlined in the Introduction, I adopted a CR epistemological stance, striving to understand the reality at play while simultaneously accepting that data is influenced by various factors, including my own perspectives, the methods used, and the context in which data is gathered (Willig, 2013). In this chapter, I will discuss how my epistemological position relates to the choice of methods utilised in this study.

### ***Qualitative Research Design***

I see participants' experiences occurring within a broader personal, social, and cultural context that shapes their meaning-making of FB experiences. Thus, I perceived the language of participants as a reflection of their dynamic, context-bound realities. A qualitative method was employed, allowing me to delve into the nuances of their language and experiences in answering the research questions (Willig, 2008). Additionally, it emphasises the importance of acknowledging and incorporating the researchers' subjectivity and diversity of perspectives in analysing data (Taylor & Ussher, 2001). As the qualitative approach allows the exploration of subjective experiences, it offers insights that are often challenging to capture through quantitative methods where people's voices are reduced to numerical data (Denzin & Lincoln, 1994).

As outlined in the in-depth literature review in Chapter Two, there is limited qualitative literature exploring the experiences of FB. Even fewer studies examine the experiences of FB of PWDs (e.g., McEwan et al., 2023). This presents an opportunity to understand the experiences of a population that is often un-represented in research (Spong & Bianchi, 2018).

I consciously avoid the term 'give voice' to participants as it implies that participants are inherently voiceless without the researcher's assistance. This approach can be disempowering and undermine the agency and inherent voice of participants, further reinforcing ableist narratives of this

population. Additionally, Braun and Clarke (2006) argue that this approach is oversimplified as the richness of participants' experiences is unavoidably filtered through the researcher's lens. A more equitable strategy is to recognise the capacity of participants to express themselves and understand that my role is merely to facilitate the sharing of their narratives, reflecting on my own influences on data interpretation. To support this approach, I employed RTA (Braun & Clarke, 2019) to analyse the data of this study.

### ***Reflexive Thematic Analysis***

RTA (Braun & Clarke, 2006, 2013, 2019) is a theoretically flexible interpretative approach that highlights the active role researchers play in producing knowledge. In reflexive practice, themes are not 'being found' or 'emerging' in the data. Instead, themes are produced by researchers by organising codes around a relative commonality as interpreted by the researcher (Braun & Clarke, 2022b). It accepts that no two researchers may produce the same codes or themes, as these are essentially interpretative activities and meanings within data are not static. Researchers are encouraged to embrace reflexivity, creativity, and subjectivity as assets rather than threats to knowledge production (Gough & Madill, 2012).

I followed this approach as, whilst having clear guidelines and organisation, it is also non-restrictive. It allows researchers to bring their human selves into the research and locate participants within broader social, political, and ideological contexts – this is crucial when investigating experiences of PWDs. This approach fits well with the CR epistemology (Braun & Clarke, 2013) and the aims of this study.

Other qualitative methodologies were also considered to assess their suitability and alignment with the study's research questions and objectives. For example, I explored IPA (Smith et al., 2009) and Narrative Analysis (NA; Riessman, 2008) for their depth in examining subjective experiences. However, IPA's focus on detailed idiographic interpretations of how people make sense of experiences and its need for a smaller sample (Smith & Osborn, 2003) made it less suitable for the

study's objectives. Examining wider patterns across a larger group of participants felt more appropriate, given the scarcity of research on FB experiences amongst PWDs. Additionally, regarding Narrative Analysis, this method's emphasis on personal stories over shared experiences did not align with the aim of identifying common themes across narratives. Consequently, RTA was chosen as it met the research needs by allowing for broader pattern identification among a larger sample of narratives.

### ***Semi-Structured Interviews***

Virtual individual semi-structured interviews were chosen as the most suitable data collection method. This method was seen as complementing CR epistemology as it offers a balance between a pre-defined set and a free-flowing structure of the interview questions (Lewis-Beck et al., 2012), emphasising the importance of context and reflexivity in building a comprehensive understanding of research questions (Finlay & Gough, 2008). This method allows for adaptability to individual accessibility needs, which would be more difficult to achieve during focus groups. It also enables adjustments of questions during data collection through direct interactions with participants during interviews (Magaldi & Berler, 2020), making the data collection process more inclusive for this population. Moreover, it offers comparability across interviews, making the identification of patterns more accessible. Finally, semi-structured interviews are well-suited to a variety of analytical approaches (DiCicco-Bloom & Crabtree, 2006).

The interviews were conducted remotely due to the participants and myself residing on different continents. This allowed participants to attend the interviews from the comfort of their homes, which could increase the sense of control over their responses (Heath et al., 2018) and make it more accessible, reducing travel, time and financial costs (Saarijärvi & Bratt, 2021). However, non-verbal signs may be less visible to the researcher, and some groups who lack access to the required technology may be excluded (Krouwel et al., 2019).

### ***Devising the Interview Schedule***

I designed the interview schedule (Appendix F) by formulating a set of questions based on those used in similar studies and identifying gaps in existing research knowledge. My supervisors reviewed the schedule, suggesting additional prompts to the main interview questions to ensure alignment with the research objectives. Consultants also shared their feedback on the potential respondent experience and found no need for modifications.

The interviews began with several demographic questions, including participant age, self-identified gender and ethnicity, and the type of self-defined disabilities they experienced. Participants were also asked how many ANWP sessions they had attended and how many of these were within the last three months, whether they were FB guides, and whether they had completed any mindfulness/nature intervention practices before attending the EcoWisdom ANWP programme. Participants were then asked to choose a preferred pseudonym, which was used to anonymise their data when recording and transcribing. The interviews proceeded with asking the three key interview questions - How has your experience of the nature program changed: 1) how you connect to yourself? 2) how you connect to others? 3) how you connect to nature? Each question was followed by prompts to facilitate the participants' thinking process. It followed a scaffolding approach, starting with general questions to establish context and comfort, then progressively narrowing to more specific queries to elicit more detailed information and insights (Patton, 2014). The research team decided not to define the terms 'the self', 'others', and 'nature' and instead allowed participants to share their understanding and meaning of these terms.

### **Participants**

Adults who self-identified as having physical disabilities and/or physical health difficulties and having attended at least two ANWPs offered by EcoWisdom were recruited to participate. Participants were required to speak fluent English and be able to participate in an online interview.

The full inclusion criteria and its rationale are outlined in Table 6. There were no other exclusion criteria.

**Table 6**

*Participant Inclusion Criteria*

Criteria	Rationale
Over 18 years old	They can consent for themselves to participate in the study.
Fluent in English.	The reflective thematic analysis uses language to elicit themes. There are insufficient funds for interpreters for this research. It is open to verbal and written forms of English, as some people may be limited in one or another due to their physical conditions.
Have attended and/or co-facilitated at least two online/in-person/hybrid ANWP sessions, at least one of them within the last three months and the rest within the last 1.5 years.	It was expected that people would have more in-depth experiences that provided richer data if they had attended more than one ANWP session, and their memories of these experiences would be more vivid if the sessions were recent.
Self-identify as someone with physical disabilities/ chronic illness/ physical mobility impairment/ limited energy/ severe fatigue and/or physical challenges associated with ageing.	The study aims to make forest bathing accessible to people who otherwise could not by building its evidence base and demonstrating it as a viable option through social prescribing. It also wishes to give voice to a population that often remains unheard of. Thus, it is essential to restrict the participants to this population only.
Have access to means to participate in an online interview (e.g., smartphone, tablet, or computer) where they can access Zoom.	Conducting remote interviews is necessary as I reside in the United Kingdom, and the participants are in Canada.

**Recruitment**

A hybrid sampling approach was used, including purposive and convenience sampling (Etikan et al., 2016). Purposive sampling involved participants being selected based on their specific association with EcoWisdom and their involvement with ANWPs - accessible FB sessions mainly designed for PWDs. Convenience sampling involved recruiting participants using the already available means—the existing EcoWisdom internal emails and organisational contacts.

The consultants within EcoWisdom circulated four emails two weeks apart containing recruitment materials to all FB participants and guides associated with the organisation, inviting their



participation in the study. The first two emails were sent following an in-person ANWP session in May, and the final two were sent following an online ANWP session in July, 2023. Additionally, the consultants made verbal announcements about the research after both sessions, guiding people to the recruitment email for more details. To ensure that participants did not feel pressured to participate in the study as invited by the organisation's FB guides, it was made clear that participation was entirely voluntary.

The recruitment materials attached to the email included the recruitment poster (Appendix G), recruitment poster transcript (Appendix H), recruitment video and transcript (Appendix I) and participant information sheet (Appendix J). The participant information sheet provided the necessary information about the research team, the nature and process of the study, participants' rights and confidentiality, possible benefits and disadvantages, and key contacts. The recruitment video was made following advice from the consultants for those who needed help accessing written information. Transcripts for both were made for those who use text-to-speech software. Additionally, consultants advised against using the term 'forest therapy' as the word 'therapy' holds negative connotations to the MMD (e.g., implying that something wrong needs to be fixed). Instead, it was agreed to use the terms 'forest bathing', 'mindful nature connection', and/or 'nature program', as these align with the SMD and have fewer judgemental connotations. All recruitment materials contained my email address so potential participants could join the study or ask further questions. Only the consultants and I knew who signed up to participate in the study, as they helped recruit the participants.

Since UH did not have sufficient funds to compensate research participants, EcoWisdom offered to sponsor these compensations, which is consistent with the sponsor's standard practice. Participants were offered a one-time \$25 (equivalent to £15) compensation for their time and energy and to help them fund any additional support they may require to participate in the study. It was thought that some participants were likely to have significant mobility impairments and require

support workers for assisting activities of daily living (e.g., dressing, eating, using IT). This was in recognition that most PWDs live in poverty (Williams et al., 2020). According to the consultants, most participants were likely to have limited energy, and it would be essential to acknowledge that they were spending their limited resources whilst participating in this research.

Participants were not informed of the value of this compensation before participation to avoid the risk of the compensation acting as an inducement to participation. However, they were informed in the recruitment poster and information sheet that they would be offered monetary compensation for their participation in recognition of their time, energy, and any additional support required. This aligns with the LMS policy on Payments to Research Volunteers and Lay Participants.

### ***Sample Size and Demographics***

According to Braun and Clarke (2013), 10-20 participants are adequate for a medium-sized RTA project. To determine the required size of the dataset, instead of using saturation - a precise calculation of sample size, which could be viewed as a positivist approach, I focused on information power (Malterud et al., 2016). This approach allows researchers to position their study alongside several continuums that consider different interviewing aspects, including research objectives, sample characteristics, the researcher's epistemological stance, the depth of data, and the chosen analytic approach. It proposes that the more narrow, dense, and specific each aspect is, the smaller the sample size required. Given these considerations, the research team decided that 15 participants would provide a high enough information power, and this was also the highest number of people EcoWisdom could compensate.

There were 20 people who expressed interest in participating. Two did not meet the inclusion criteria. The first person attended only one ANWP session. The second person did not have access to the necessary IT equipment to participate in an online interview, and the research project did not have sufficient funds to complete an international phone call. One other person withdrew before the interview due to no longer being available to participate, given their busy schedule. Two

other people remained on a reserved list in case of further withdrawals. Thus, a total of 15 people completed the research interviews. Six of them opted to contribute to this research without compensation. Participant demographic information is outlined in Table 7. To maintain anonymity within the EcoWisdom community, demographic details are not linked to participants' pseudonyms.

**Table 7**

*Participant Demographic Information*

Age range	Participants were aged 20–79 years old (M = 57.33, SD = 14.66 years).
Gender	3 participants identified as male and 12 female.
Ethnicity	12 participants identified as White Other, 1 White/First Nations, 1 Black Other, and 1 Black Caribbean.
Disability	Participants' self-described disabilities included visible, non-visible, acquired later and congenital, and cross-disability groups. Some examples include spinal cord injury, fibromyalgia, and cerebral palsy.
Number of ANWP sessions attended	Participants attended a total of 1-10 online and 1-4 in-person forest bathing sessions. As per inclusion criteria, all participants attended at least 2 sessions, with 1-3 of them occurring within the last three months.
Forest bathing guide	3 participants were forest bathing guides, 5 guides were in training, and 7 not training to become guides.
Engaged in other nature interventions and/or mindfulness activities prior to ANWP	1 participant had prior experience in nature-based interventions and mindfulness, 4 in mindfulness and meditation, 4 in meditation only, 3 in mindfulness only, and 3 had no prior experiences.

**Data Collection**

The interview procedure is outlined in Figure 4. When participants expressed interest in the study, I verified their eligibility by sharing the inclusion criteria from the research poster and asking for confirmation. If they did not meet the criteria, I informed them sensitively that they could not proceed with the interview and explained the reasons detailed in Table 6. Excluded applicants were given an opportunity to ask questions and were issued a list of support sources and contacts of the UH Secretary and Registrar if they wished to complain about the study.

Once suitability was confirmed, participants were asked if they needed interview adaptations (e.g., regular breaks), and these were accommodated. I asked participants to join the

interview in a private space for confidentiality and informed them I would do the same. They were also advised to follow local COVID-19 safety precautions if using a public space or computer. Participants were emailed a password-protected Zoom software (Barbu, 2014) meeting link to ensure privacy. Zoom was chosen because it is UH-licensed and familiar to participants from ANWP programs. I used the UH VPN – Pulse secure connection when conducting interviews for additional security.

The interviews began with introductions and an overview of the interview structure, which stated it would take up to 1.5 hours. I confirmed if participants had read and understood the information sheet or needed it read aloud to facilitate accessibility. Opportunity for questions was provided. I then read the consent form (Appendix K) and obtained verbal consent for participation and recording. The form included an option to opt-in or out of future study updates. Recording and transcription were done via Zoom.

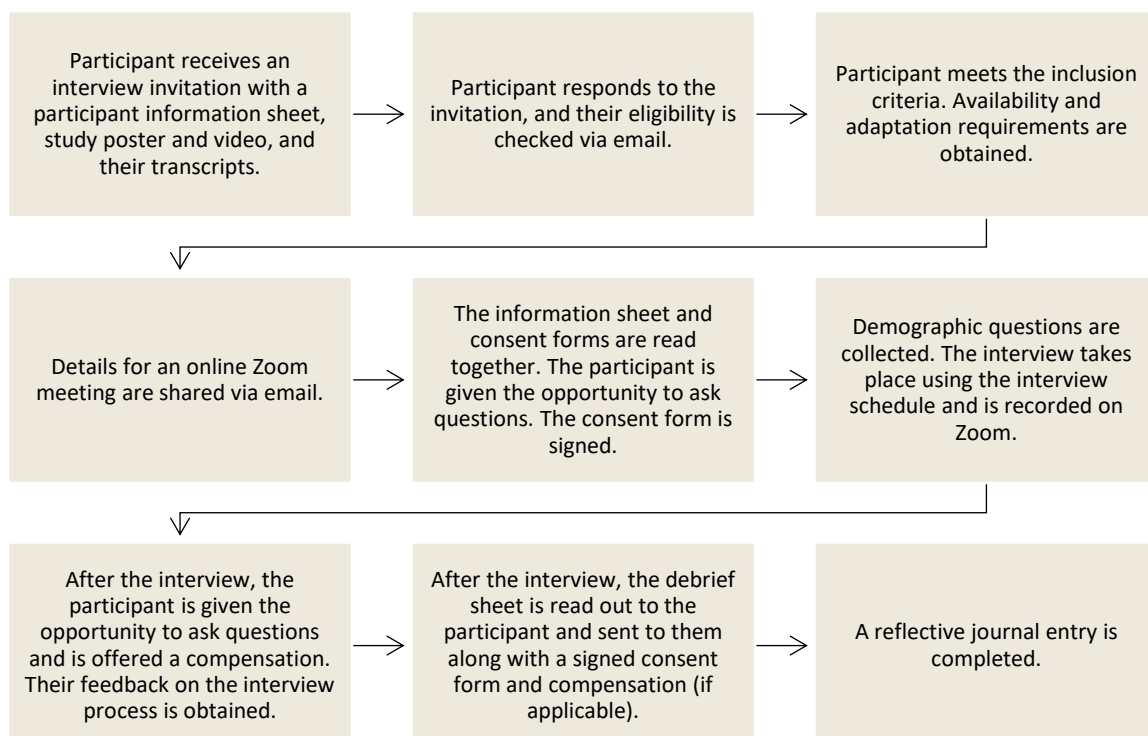
During interviews, I advised participants to share what they were comfortable with and assured them I would remove any regretted disclosures from the transcript if requested. The interview schedule was flexible, allowing adaptations based on participants' responses. Although the inquiry was not expected to cause harm, I was aware of the emotionality that reflecting on connectedness might evoke, given its potential limitations for this population. I, thus, informed participants they could skip questions, take breaks, or terminate the interview early. I utilised my clinical skills and remained mindful of emotional responses during interviews. No participants reported distress. Some became tearful but found it therapeutic and relieving. As both researcher and clinician, I avoided stepping into a therapist role and offered warmth and empathy instead. I was monitoring my own emotional responses, knowing I could seek support from supervisors or well-being resources if needed.

Once interviews were completed, participants were provided another opportunity to ask questions. I also asked for verbal feedback on how participants found the interview process.

Participants were given the option to keep their feedback anonymous by emailing the primary research supervisor instead, who would keep the participant's name confidential from me and only communicate the given feedback. Participants were then offered an optional monetary compensation. Payments were made via an email transfer arranged by the consultants through EcoWisdom. This only required the participant's name and email address, which the consultants already knew. Finally, participants were read and emailed a debrief form (Appendix L), which detailed the following steps and some support organisations, considering the possibility that some topics discussed may have felt distressing. This included a reminder of an option to withdraw their data up to two weeks after their interview and that they would be emailed a results summary once data analysis was complete and would be asked to provide optional feedback.

**Figure 4**

*Interview Procedure Flowchart*



## Data Storage

Only Zoom audio recordings were retained, and video recordings were destroyed following each interview. I manually transcribed Zoom recordings to ensure they were correct. Simultaneously, I anonymised the transcripts using pseudonyms chosen by each participant. The audio recording and the anonymised transcriptions were stored in password-protected documents on a secure GDPR-compliant UH OneDrive corresponding to the UH Ethics and Research Integrity guidelines.

Participants' consent forms, names, pseudonyms, and contact details were also password-protected and stored on OneDrive separately from interview data, only accessible to me. The audio recordings, transcripts, and consent forms will be kept until I complete my doctorate in clinical psychology degree in line with UH policy. Following this, all documents will be destroyed.

## Data Analysis

The demographic data was outlined using descriptive statistics (Table 7). The qualitative data from interviews was analysed using RTA (Braun & Clarke, 2019). NVivo software was used to facilitate the RTA process. Braun and Clarke (2006, 2022b) developed a six-phase approach emphasising that this is an iterative process. Table 8 outlines how each of these phases was followed. See Appendix M for coding extracts and Appendix N for theme generation examples.

RTA utilises two primary strategies of theme generation: the inductive 'bottom-up' approach, which extracts themes directly from raw data, and the deductive 'top-down' approach, which develops themes based on established theories and literature. According to Braun and Clarke (2020), these methods dwell on a continuum rather than being mutually exclusive, questioning the possibility of a purely inductive approach. I aimed to primarily employ an inductive method, allowing themes to be firmly rooted in data, enabling an open data interpretation detached from my preconceptions. However, completely separating my personal and theoretical views, along with insights from prior research, from the analysis proved impossible. Embracing subjectivity as

beneficial rather than obstructive is crucial in qualitative research, especially in RTA (Luttrell, 2019; Nadar, 2014). Thus, I employed a combination of both inductive and deductive methods in my analysis.

Member reflections allowed research participants to reflexively elaborate on RTA (Tracy, 2010) and enhance the credibility of the study (Bloor, 2001). This process can be empowering for participants by treating them as co-contributors, as it allows collaboration in the final presentation of research results. Participants were emailed a results summary and member reflections invitation, including a graph, visual map, and table summary of final themes and sub-themes, as well as an explanation of how their feedback would be included and the relevant confidentiality considerations (Appendix O). They were also emailed a video introducing the contents of this document and its transcript (Appendix P). Participants were asked to share their thoughts, reflections, critiques, confirmations, and any other feedback they may have on the findings. Due to time limitations, it was not possible to review and update the final RTA results based on this feedback. However, a summary of key points is included in Chapter Four.

To maintain a thorough, methodical, and reflexive analysis using RTA, I employed a 15-point checklist for good RTA (Braun & Clarke, 2022b; Appendix Q).

### Table 8

Six-Phase Process of Reflexive Thematic Analysis of the Current Research

Phase	Process
Phase 1: Dataset Familiarisation	I immersed myself in the data by listening to audio recordings, transcribing the interviews, and reading transcripts multiple times. This helped me become intimately familiar with each interview's content. I annotated the transcripts to identify the initial ideas and insights of each interview and the dataset as a whole. I also engaged in reflexive journaling throughout the six phases.
Phase 2: Data Coding	I was the only person coding. Thoroughly and systematically, I explored all the transcripts to identify and code (i.e., label) words or phrases that were relevant and meaningful to the research question. Coding levels ranged between capturing both semantic (i.e., explicit) and latent (i.e., implicit) meanings in the data. I shared these initial codes with the consultants and supervisors, inviting them to be 'critical friends' and offer critical feedback (Cowan & Taylor, 2016). This was to challenge each other's construction of knowledge and facilitate reflection on the differences in subjective interpretation of the data and choice of labels. This process allowed us to achieve richer insights rather than seek agreement about codes (Braun & Clarke, 2022). Over time, as I gained new insights and multiple layers of reflection, the codes evolved.

Phase 3: Initial Theme Generation	I began to identify patterned meanings across the dataset and group codes that seemed to share core ideas and may help answer the research question into candidate themes. This was not a simple search but an active construction process, where themes were built based on the data, the study question, and my own knowledge and understanding (Braun & Clarke, 2022b).
Phase 4: Theme Development and Review	I evaluated the initial fit of candidate themes by ensuring they aligned with the coded extracts and revisiting the full dataset. I repeatedly reviewed themes and sub-themes until they were deemed to effectively convey a meaningful narrative from the data that addressed the research question. During this process, themes were actively combined, eliminated, and/or arranged into sub-themes.
Phase 5: Theme Refining, Defining and Naming	I refined the analysis by ensuring each theme was clearly defined and centred around a strong core concept. Together with the consultants and the supervisors, I questioned the narrative each theme conveyed on its own and how it fits into the broader story about the data or its relationship to other themes. Key steps included writing a brief summary for each theme and choosing concise and informative names for them. This included shared reflections on different positionalities and understandings of the themes between the research team members.
Phase 6: Writing Up	I completed the writing process by combining the analytical interpretations with clear data examples to convey a coherent and meaningful story about the final themes and sub-themes that addressed the research question. Data extracts were used illustratively, providing examples to underscore analytical points (Braun & Clarke, 2022b).

### Ethical Considerations

This study was granted ethical approval from the UH Health, Science, Engineering and Technology Ethics Committee with Delegated Authority. The protocol number is LMS/PGT/UH/05351 (Appendix R). Two subsequent ethical amendments were approved, seeking permission to update the title, extend data collection dates, publish the study, and permission to seek participant consent to include their photographs to illustrate the study. The protocol numbers for these are aLMS/PGT/UH/05351(1) (Appendix S) and aLMS/PGT/UH/05351(2) (Appendix T). The risk assessment was approved by the LMS. The Code of Human Research Ethics (British Psychological Society, 2014) was applied to guarantee that the project complied with established ethical guidelines.

Table 9 summarises several ethical considerations for this study discussed throughout the current chapter. These considerations being dispersed throughout the chapter rather than condensed in one neat section reflects my practical rather than procedural approach to ethics (Guillemin & Gillam, 2004). I believe that it is my responsibility to maintain continuous ethical



and methodological reflexivity on the dynamic contextual, relational, and situational dilemmas throughout my research practice rather than viewing ethics as a clearance tickbox to be obtained by the ethical institution (Naidu & Sliep, 2011). Such reflexivity was not ensured in isolation but through the inter-relational dialogue with the consultants, supervisors, and participants (Gilbert & Sliep, 2009).

**Table 9***Ethical Considerations*

Before Interview	Experts by Experience Consultation	Two experts by experience consulted the rest of the research team from the beginning of the research process to ensure that participants' needs were considered, the research was conducted with care, and no harm was caused. They were compensated £20 per hour for their time and energy in supporting this project.
	Voluntary Participation	During recruitment, participants were informed that their participation was entirely voluntary. Due to limited university research funds, I could not offer participants compensation for their participation directly; however, £15 compensation was issued by EcoWisdom organisation for each participant who opted-in to receive it instead.
	Participant Information Sheet (Written Form)	Participants were emailed an information sheet outlining the research team, the nature and process of the study, participants' rights, confidentiality, possible benefits and disadvantages, and key contacts.
	Adaptations	Participants were asked whether they required any adaptations for their interviews that considered their physical impairments and needs, and these were implemented.
During Interview	Participant Information Sheet (Verbally)	Participants were read the information sheet and were given an opportunity to ask questions.
	Participant Consent Form	Participants were read the consent form and asked to provide verbal informed consent to participate, which was recorded on the form with them witnessing. They were also emailed a signed copy of this document.
Post-Interview	Data Inclusion and Amendments	I encouraged participants to share only what they felt comfortable with and assured them that any regrettable information could be removed from the transcript. Participants were also informed that if they wished to withdraw from the study, their data would continue to be used unless they expressed a wish for it to be deleted within two weeks of participating in the study.
	Participants Feedback	I asked participants for verbal feedback on how they found the interview. If they preferred their feedback to stay anonymous from the interviewer, they were provided with the email address of the primary research supervisor. They were informed that the supervisor would share this feedback with me while keeping the participant's name confidential.
	Participant Debrief Form	Participants were read and emailed the participant debrief form, which included contact details for organisations providing emotional support should they need it, considering that some topics discussed may be

		upsetting to them. They were also informed of the following steps following their interview and allowed to ask questions.
	Confidentiality and Data Storage	<p>I occupied a private space during the interview and asked participants to do the same to ensure confidentiality. To join the interview on Zoom, participants were given a password to ensure that no one else could enter the virtual room.</p> <p>Participants were asked to choose pseudonyms to anonymise their data when recording and transcribing. Only I completed the transcription, and all other identifying details were removed at this point.</p> <p>Only the anonymised transcripts and audio recordings were retained and stored separately from the consent forms confidentially on a secure University of Hertfordshire OneDrive, following the University of Hertfordshire Ethics and Research Integrity guidelines. These will be kept until my course is complete in line with the University of Hertfordshire policy. All the above information will then be destroyed.</p>
Post Data Analysis	Member Reflections	Participants were emailed the results summary as a written document, including a graph, visual map, and table summary of the final themes and sub-themes, as well as a video introducing the contents of this document and its transcript. Participants were asked to provide feedback on the study's findings. Key points from member reflections were summarised following the outline of the study's findings, allowing for reflexive elaborations of the analysis (Tracy, 2010).
	Publication and Dissemination	Participants will be informed of any publications or other dissemination if they have opted-in to hear about these in their consent form. Consultants will be offered opportunities to collaborate on presentations within EcoWisdom or outside this organisation.
	Authorship	Consultants will be included as co-authors and offered an opportunity to collaborate in co-writing publication manuscripts.
Throughout all stages	Risk to the Researcher	It was agreed that if I found anything discussed in the interviews upsetting, I would inform my supervisors and seek emotional support from the relevant staff well-being sources within NHS or the University of Hertfordshire.
	Managing dual Roles of Researcher-Therapist	As a researcher and a clinical practitioner, I suspected that I might be inclined to step into my therapist role when communicating with research participants should they share an issue they are dealing with or express difficult emotions during or after the research. Although I could offer warmth and empathy in such instances, I was mindful not to provide therapeutic interventions myself but to signpost the participants to the relevant resources where they can seek support if required.
	COVID-19 Considerations	When booking time for the interview via email, participants were advised to stay safe and take COVID-19 precautionary measures as recommended by their local governments when participating in the interview (e.g., use hand sanitisers if using a public computer).

## **Quality, Validity and Self-reflexivity**

### ***Assessing Quality and Validity of the Methodology***

The CASP (2018) checklist for qualitative research, which was used in the SLR, was chosen to appraise the quality of this study, as detailed in Chapter Five.

### ***Self-Reflexivity***

Reflexivity in research helps to analyse and demonstrate how personal, relational, and social identities may shape research expectations, methodological choices and data interpretations (Braun & Clarke, 2021; Finlay & Gough, 2008). I was transparent in sharing my epistemological and personal stances in the Introduction.

As an outsider-researcher, not having direct experience with disability or FB prompted some participants to explain their experiences and thought processes more explicitly. Yet, it is possible that this same lack of experience made it more challenging for them to share more profound or challenging experiences (Dwyer & Buckle, 2009). Hence, it was crucial to engage in ongoing collaboration with the consultants and supervisors and engage in discussions where I critically reflected on my knowledge of disability and nature interventions, as well as how to approach the participants and the overall research process.

I further practised reflexivity by using critical friends with my supervisors and consultants during data analysis (Cowan & Taylor, 2016), engaging participants in member reflections of the results summary (Tracy, 2010), and recording a reflexive research journal throughout various stages of this project (Appendix U) to help me guide decision making. As outlined in the journal excerpts, I also engaged in my own nature-connection practices to cultivate a deeper understanding, reflections, and a felt sense of the research topic. This included observing one of the online ANWP sessions, attending an urban park-bathing session, completing interview transcription outdoors with my feet planted in the soil, and going to a meditation-nature-connection retreat.

## Chapter 4: Findings

### Chapter Overview

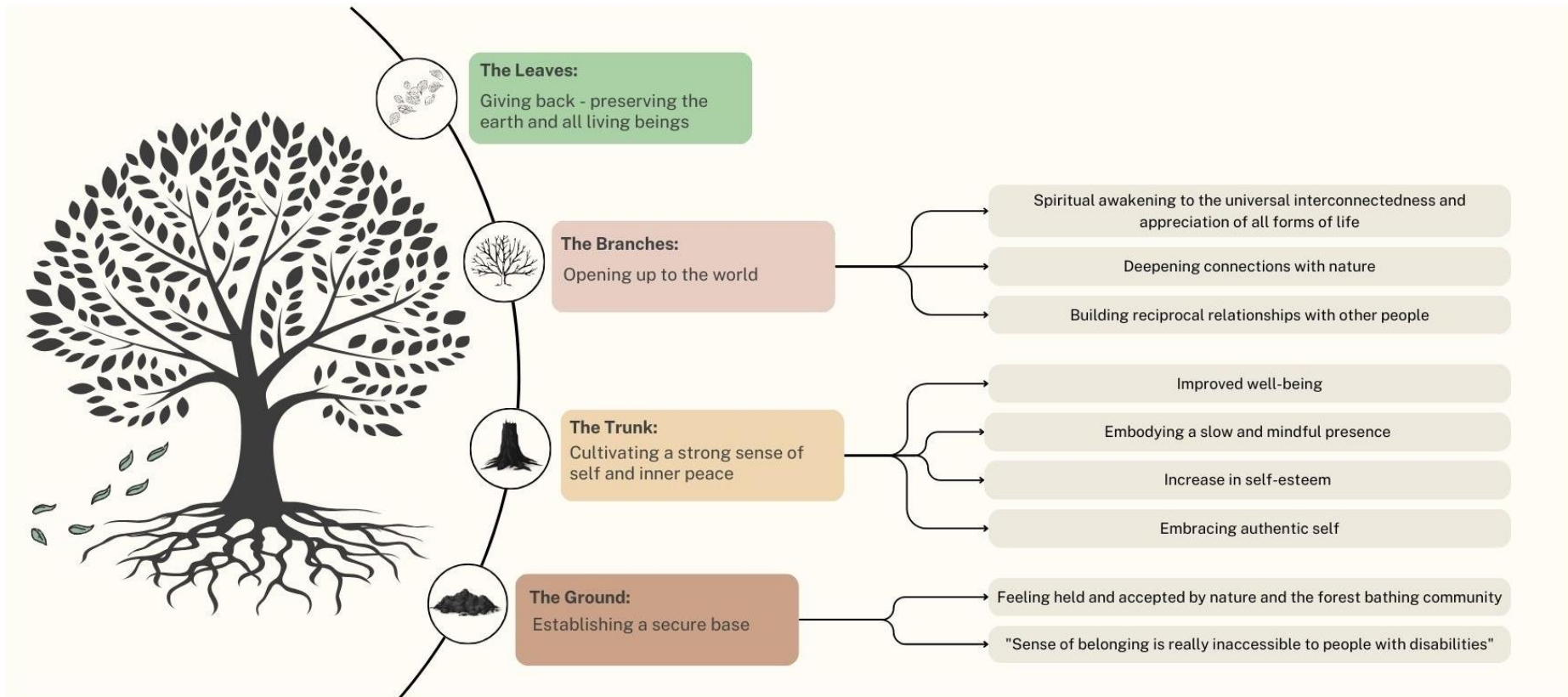
This chapter details the findings from the RTA. Four themes were generated, illustrating the PWDs' experiences of change in their sense of connectedness through FB:

1. The Ground: Establishing a secure base.
2. The Trunk: Cultivating a strong sense of self and inner peace.
3. The Branches: Opening up to the world.
4. The Leaves: Giving back – preserving the earth and all living beings.

Each theme includes multiple sub-themes, visually mapped in Figure 5. The themes and sub-themes are discussed and illustrated using quotes from the interviews that best represent core meanings. Just as the different parts of the tree are profoundly interconnected and mutually dependent, the interconnections between various themes and sub-themes will be noted. This chapter concludes with member reflections discussed in Chapter Three.

Figure 5

A Visual Map of Themes and Sub-Themes



### **Theme 1: The Ground: Establishing a secure base**

Within this theme, two contrasting pathways emerged: the challenge of inaccessible societal structures for PWDs and the nurturing embrace of nature and the EcoWisdom FB community. While the former highlights struggles with exclusion and dehumanisation, the latter underscores the profound sense of belonging and acceptance found in nature and an inclusive community that offer an environmentally and societally secure base.

#### ***Sub-Theme 1: "Sense of belonging is really inaccessible to people with disabilities"***

This sub-theme highlights the isolating challenges PWDs often face within a stigmatising and exclusive society.

Firstly, participants expressed that living with a disability can feel like managing a full-time job due to the physical, emotional, and societal factors necessitating an outlet:

*...it's never ending. It just doesn't seem to stop as far anxiety or stress. There's always something when you have a disability. I always say it's a full-time job that you don't get paid for... There's things that people don't realise that you have to deal with. It's not just the physical, it's everything, including inclusion... So, to be able to have an outlet and to be able to have a coping strategy is really important. (Michelle)*

Participants shared that societal contributors to such distress include stigma and lack of inclusion, which may not be evenly distributed within this population:

*We're seen as a burden, and we're taking up all the resources... Sorry, I'm already crying... You're not really included a lot of the time in society... I'm always the one that has to make the first move. (Michelle)*

*... people with invisible disabilities suffer possibly even more. Because it's not even obvious that they're being left out... (Stephanie)*

Participants added that the MMD fosters societal exclusion and is dehumanising. Michelle said that this model is “*looking at people as a medical case... shoving people to the side,*” failing to “*see people as people*” and consider “*what people are actually feeling*”. Monica pointed out how this can lead to self-blame, feeling like “*something's wrong with me*”.

Participants also spoke about nature not being made accessible to them and varied disability needs not being considered:

*I don't get the opportunity to connect with nature that often due to my mobility challenges... It's not always very accessible. So, unless something's adapted, I'm not able to access things very well. (Monica)*

*The meeting I just came off was creating urban natural parks... And they're saying, we need to look at accessibility ramps and wide doors. I said, no, we need to look more than that. We need to look at braille, we need to look at big signs for people with dementia, we need to look at benches for seniors. Everybody, when they think of accessibility, they think ramps and wide doors. You know, I'm the first one to look at that. I'm sitting in a wheelchair. But I think other people with other kinds of disabilities need to be addressed. (Taryn)*

Finally, several participants talked about the impact of such societal exclusion—how isolating it can be and its negative psychological effects, which were heightened by the COVID-19 pandemic:

*I have had difficulties, especially through COVID. Because when you don't have that social connection, it leads to depression... It's when I'm isolated that I'm down about myself... (Monica).*

*It's very difficult to be fully yourself. You feel extremely alienated... I felt lost and certainly alone... And yeah, that I didn't belong. (Stephanie)*

It could be inferred that the various challenges described may leave PWDs without a societally and environmentally secure base—lacking the crucial support and safety that are needed to form a strong sense of self and engage with the wider world.

***Sub-Theme 2: Feeling held and accepted by nature and the forest bathing community***

This sub-theme illustrates how joining an inclusive EcoWisdom FB community and connecting to nature in accessible ways provided participants with a safe space where they felt accepted, included, and nurtured. This fostered a sense of belonging, reduced isolation, and offered the socially secure base identified as lacking in sub-theme one.

Most participants reflected on the beginnings of their FB journey and the elements that facilitated engagement and safety. For example, they appreciated that the invitations to FB were delivered gently without the promise of change:

*It really was very unlike every other thing that a lot of people have, these hokey or fake natural programs where they tell you gonna get this, and in about two weeks, this will happen. They didn't promise anything; they just said to open yourself to it. (Cosy)*

Participants also valued being provided with accessible information about FB, including its history, research, and how to interact with nature:

*... they talked about what it was, they simplified it... introducing us to the history and all the scientific evidence to support what I am feeling... I found it really interesting, all the information about why it is beneficial... showing you things that you could do with the tree or things that you could do with fractals. (Crystal)*

Most participants spoke about how their engagement had been facilitated by being offered various accessible and individually adaptable ways to connect to nature, often using the power of visualisation. This contrasts with environmental exclusion usually experienced by PWDs discussed in sub-theme one:



*Someone made a video of someone walking barefoot in a stream. And I experience that, you know, just like I was walking through this thing in the stream... (Cosy)*

*If you're not able to physically get out in nature, I do really believe in the power of visualisation... you could bring in a scented candle that smells like some of your favourite flowers or something that just makes your mind picture it stronger... (Buttercup)*

Participants also found that the authenticity of the program facilitators cultivated a sense of safety during their engagement in FB:

*This has also given me a great contrast between people who are authentically using and moving through nature... with... I don't want to say snake oil, but some of the people who are appearing on Youtube, they've got a tree behind them to make people feel like it's secure, but really, it's a trick because they're trying ultimately to get people to buy their product. (Cosy)*

The same was said about nature:

*Nature is really honest... Same with the animals, they give you how they are, you know they don't lie to you, and you feel safe. (Michelle)*

Feeling safe was further enhanced by the inclusive FB groups, which facilitated opening up to others. This contrasts with experiences of societal exclusion of PWDs described in sub-theme one:

*You feel included, and you feel heard... People just had the right to say what they wanted to say, which, again, I don't think is true for a lot of people with disabilities in society... You feel safe in that environment to open up and talk about what you're really feeling... it's really helpful. (Michelle)*

*I felt welcomed. I knew it was a non-judgmental, safe space. I really allowed myself to go deep in... to share freely... I often have been a very quiet, shy person, and not wanting to share, and I was just amazed at how much it allowed me to open up and be myself... (Rowen)*

Stephanie suggested that the term 'inclusion' would be better explained by "*celebration of all the different ways we can be in the world.*" She offered an example of a mindful movement group exercise: "*The effect on people who can't raise their arms, they are celebrated as whatever they're doing as absolutely valid and worth exploring... I can't really express how profound that is.*" Consequently, Stephanie expressed feeling seen and accepted by the group without judgment or explanation: "*I feel that I'm seen... Complete acceptance... I do not have to excuse my existence. I do not have to explain my existence.*"

The holding embrace of nature mirrored this:

*A recognition of me as being alive and present... There's no commentary, there's no judgment, it just is what it is... Even in the non-depth, even when I was really struggling to find out what was going on for myself, even when I couldn't meet myself, nature was still holding my hand in it. (Ayla)*

Accepting someone as they are without judgment, despite differences, and without attempting to fix them in the ways outlined above contrasts with the identity-excluding MMD discussed in sub-theme one.

Furthermore, the group element allowed people to expand their connections and spend time with like-minded peers, which they enjoyed:

*They're all things that you could do by yourself, for sure. But I do enjoy doing them with other people. I guess that's just spending time with like-minded people. (Buttercup)*

Within these groups, people felt they could relate to each other's experiences:

*... we're just with other disabled people. And I think we all recognise how many each of our challenges we all have because we relate. (Buttercup)*

*... connecting with each other through similarities and even through differences. (Monica)*

People also described how the group-sharing experiences allowed them to learn from one another:

*I think listening to the group and just learning from the group, for sure. (Bob)*

*And their responses can create fresh eyes for me and appreciation. (Feather)*

Stanley added that he felt motivated by other group members with disabilities: *“Doing it with other people with physical challenges, and realising, hey, we can all do this.”*

However, Ayla expressed a preference for individual practice: *“ANWPs are more of like, we're all gonna do this thing. Whereas I find, being one-to-one or being alone, there's more freedom to follow my own calling, and to process the things I need to process”*, demonstrating that despite the many group's benefits it may not be for everyone.

When reflecting on group experiences, most participants shared a sense of community, which cultivated belonging and engagement in FB:

*You feel like you belong... to a community... And if it's a really nice, welcoming community, and you're happy being with them, and you can enjoy the benefits of what we're all practising, then it just keeps you coming back for sure. (Marley)*

*And that stimulates the sense of belonging that is beyond anything many people have experienced in their lives, and I see that in the program. People don't want to go away at the end. People hang around, they don't want to shut down their computers. It happens every time, and people come back. (Stephanie)*

Participants felt that nature, too, provided a sense of belonging:

*... belonging with the trees. (Monica)*

*I don't feel an intruder, you know. I made some birds fly away. That's okay. That's part of the whole thing, and they'll come back... It is ok for me to be here. I belong. (Stephanie)*

Consequently, participants expressed that a combination of nature and community helped them combat feelings of isolation discussed in sub-theme one:

*When I attended the first session ever, I saw the images of nature in their videos, and then seeing the people on Zoom, I think it reinforced that I wasn't alone. (Monica)*

## **Theme 2: The Trunk: Cultivating a strong sense of self and inner peace**

Building on the secure base outlined in theme one, this theme encapsulated individuals' transformative journeys as they embraced their authentic selves, nurtured self-esteem, embodied mindfulness and slowing down, and experienced improved well-being. This journey unfolds through practices including mindful self-awareness, engagement with nature, and communal experiences. Participants articulated a profound shift towards self-acceptance, shedding societal expectations and embracing their true essence, leading to heightened self-compassion, confidence, emotional and physical harmony, and resilience.

### ***Sub-Theme 1: Embracing the authentic self***

This sub-theme illustrates the factors that facilitated individual discovery and acceptance of the authentic self and the impact this had.

Participants identified many benefits of slowing down through FB, which will be discussed throughout the following sub-themes. One benefit was an increased self-connection:

*I think, genuinely, the only way I've ever deeply connected to myself has been through slow time. (Ayla)*

Slowing down and mindfulness seemed to facilitate self-connection, along with other benefits (e.g., increased awareness of emotions, thoughts, and physical sensations):

*I think it's allowed me to be aware of my body, be aware of its needs... get in touch with my feelings, the stress level. (Monica)*

*...just be in tune with what's going on both mentally and physically. (Michelle)*

Individuals also spoke about an increased capacity to accept and be with these internal experiences non-judgementally, which resulted in emotional release:

*Being more open to allow whatever it is, it's there. Instead of trying to hold back all your thoughts, your feelings, being more accepting of... it allows me to be more of an observer rather than a referee... to let it be. (Stephanie)*

*I think I've allowed myself to welcome that pain, whereas before I would be angry, I'd be like. Why do I have to deal with this?... I think I am able to sit with the pain more, and not see it as this horrible thing. (Rowen)*

Acceptance of internal experiences extended to a full acceptance of themselves:

*I am what I am. (Stanley)*

*Being okay with yourself. (Buttercup)*

Self-acceptance seemed to align with mindfulness teachings of non-judgmental noticing, acceptance and letting go. It was also linked to participants reporting observing the imperfections of nature, which taught them to accept their own:

*One of the cedar trees outside my window has a little yellow branch where the needles have died... I don't look at that and say, oh, I wish that wasn't there, or it's a really rough, bumpy part. I just think that it is what it is, and I've tried to take that on when I view myself, too... I'm part of nature, and nature is not perfect. (Rowen)*

Additionally, self-acceptance appeared linked to participants' reported experiences of having permission to be their authentic selves, granted by the accepting nature and FB community, as mentioned in theme one:

*Nature has always just allowed me to be who I am. (Ayla)*

*People were truly able to be themselves. And without having to apologise or feel 'other'.*

*(Stephanie)*

Given this supportive context and practices, participants reported feeling that they had rediscovered their authentic selves. This mirrors observing the authenticity of nature and the FB facilitators outlined in theme one:

*This thing helped me to really anchor and find, where is Cosy. To really find me again. (Cosy)*

Monica and Stanley alluded to the idea that the authentic self transcends and is not confined to disability:

*.... the chair... it helps me get around, but it doesn't define me. There are other aspects that make me who I am. I don't have to breathe, live my disability all the time. I have other parts of myself. (Monica)*

*I certainly forget I'm in a wheelchair. You sort of go outside your body a bit. (Stanley)*

Finding and accepting authentic selves seemed to support the participants in releasing shame and letting go of other people's judgement:

*I do not have to be ashamed of my existence. (Stephanie)*

*In some respects, I don't care anymore... what other people think of me is none of my business. (Stanley)*

For Terry, self-blame was also released by recognising that internalised limitations are a product of systemic constructs, not individual flaws: *"It's not the people. It's the system, that's broken. It's forcing people to be like that. So, it's not useful to blame people."*

Finally, people spoke about becoming more compassionate towards themselves as a result. It could be assumed that compassion afforded by nature and community outlined in theme one teaches individuals how to cultivate it for themselves:

*I think that I'm more generous with myself, more self-compassion... (Stephanie)*

### **Sub-Theme 2: Increase in self-esteem**

This sub-theme illustrates how, through their engagement in the FB program, most participants recognised increases in self-esteem and confidence and their contributing factors.

Participants found that living authentically, as discussed in sub-theme one, was one of the factors that increased their self-esteem:

*Not be who you want to be. But like, yeah, just do things that you feel happy doing... So, in that sense, I do have more self-esteem. (Buttercup)*

*I don't have to say anything that's inauthentic... And that raises self-esteem, because then you're just more comfortable with yourself. (Feather)*

Monica expressed that nature and community help increase self-esteem: *"Definitely self-esteem, especially when I'm connected to nature and have the opportunity to connect with the community through online or in person."*

Michelle shared that self-worth grows through feeling validated when sharing similar experiences in FB group, described in theme one: *"I think it improves self-esteem just by being acknowledged... Validated... But also, being a part of a group that is experiencing the same things."*

For most participants, the increase in self-esteem was accompanied by feeling more secure within themselves:

*"There's a real sense of security in the self." (Ayla)*

Similarly, people noticed an increase in unshakeable self-confidence, especially in social contexts:

*There's a sense of self-confidence that can't be breached by anything anymore. (Ayla)*

*... not as nervous about meeting people, too. (Buttercup)*

Finally, participants shared feeling empowered to step away from learnt helplessness, focus on their strengths and possibilities, and push through societal limitations and fears often imposed on PWDs:

*Somebody that had a learned helplessness, and I didn't think I could do anything, that I was stuck in this position, and wouldn't achieve anything, I wasn't good enough for anything.*

*Then, when I started nature programs and other avenues, and learned that I can participate, maybe in a different way, but I can participate. Then I felt like, better about myself and was able to see some of my own strength, instead of looking at it like a deficit. (Monica)*

*I guess it's that feeling of being trapped in a chair to being involved and curious, looking out... It's more almost like an empowerment... I've felt like, I want to get out, I want to do more, I want to experience more, I want to, you know, expand... It's just that shift to what you can do as opposed to what you can't do... (Stanley)*

### ***Sub-Theme 3: Embodying a slow and mindful presence***

This sub-theme shows how engaging in FB encouraged individuals to slow down and be mindfully present and the benefits these practices provided.

Transitioning from rushing to permitting oneself to slow down was one of the most experienced changes spoken about during the interviews:

*In a way, giving you permission to take that break and to carve out time to not be running around like a maniac... slowing down with the time spent with nature. (Terry)*

Slowing down seemed to support participants' practice of mindful awareness—paying attention to the presence with open senses and becoming deeply attuned to the wider world:



*I take more time to digest all the sights, sounds, and smells, and often even conversations, that of people... What's going on with the weather? What do I smell? What do I feel? What do I taste? What do I hear? All about opening up your senses rather than walking on auto-pilot and not really paying any attention... I feel like I was walking through my life half awake before, and now I feel like. I use the word noticing. I feel like I'm more awake. (Marley)*

Participants also expressed that slowing down and stepping away from stressful situations to spend mindful time with nature cleared their minds and enabled them to approach problems:

*It clears my mind, clears my thoughts. I find, often, if I have a problem I'm struggling with, I can't seem to get the answer. Sometimes, I would just simply go down to the waterfront. And then just sit and look at the water, look at the ducks... I don't think about whatever the problem is. I just focus. And by the time I come back, sometimes I have a resolution, or I just have a different perspective on the problem. (Lorraine)*

Participants felt that a mindful nature connection allowed them to escape external stressors and helped them shift their focus away from internal discomforts:

*Just acknowledge, okay, my body is feeling this way, but right now, I have the chance to just relax and think of something else. (Michelle)*

*Looking out, not looking in. (Stanley)*

Regardless of the source of stress, people reported that engaging in FB reduced their need to control things and increased their acceptance of life circumstances:

*I was trying to prove something before, you know. Trying to get control of things that I don't have control of. A lot of that let go a little bit... I'm being more accepting of things that are offered to me. (Stanley)*

Additionally, participants noticed an increased capacity to reflect:

*I am more contemplative... I would go more inward into my own thoughts and my own reflections. (Lorraine)*

Others spoke about reawakened creativity:

*I would definitely say it's brought out the imagination, the creativity in me. (Marley)*

All these skills seemed to equip participants with the necessary coping tools to navigate life circumstances and regulate their emotions:

*I think there are techniques that I've learned that help me when I become anxious or stressed... I like that I'm able to control my emotions. (Bob)*

As a result, participants reported feeling deeply grounded:

*It really helped me become centred again... I felt grounded within myself. (Rowen)*

#### **Sub-Theme 4: Improved well-being**

This sub-theme relates to participants' experiences of how their well-being has improved physically and emotionally following participation in FB.

Firstly, nature was seen to have a healing energy that aids physical recovery:

*Because I've had a lot of illness, and I've had a lot of surgery and things done to my body, I have come to the understanding of nature as an energy, as a force, which isn't neutral. It wants to heal. It always wants to grow. So, I see an energy. And if you give it a chance... It wants to heal... (Stephanie)*

Some proposed that it is a good alternative to medical treatments, which has been proven effective within Indigenous cultures:

*... there's a lot of Indigenous natural healing that goes on within cultures... that they've had from the beginning of time that really does work... So I definitely feel like there's other ways to heal one's mind, to heal one's body, than just Western medicine, for sure. (Michelle)*

Participants noted how spending time with nature or using nature visualisation techniques helped them relieve physical distress, such as pain, and afford relaxation:

*In terms of managing my pain, I often use imagery from nature, from memory, or I go sit in a park and do that on a regular basis... I will focus on my breathing, I will visualise parts of my body, bring about warmth through my breath, and start imagining I'm in a place of relaxation. And I often use nature images to bring about that feeling of pain relief. (Monica)*

Several other physical improvements were noted during interviews. Monica mentioned, "I can control my breathing better" and "bring my blood pressure down", while Cosy observed, "one of the ways this made a difference for me is in my sleep."

In addition to physical health benefits, participants noted several improvements in emotional well-being through FB, considering it a remedy for stress, anxiety, and depression:

*It's a way of relieving stress. (Monica)*

*... in terms of the depression that came with the [impairment] and lifestyle total change... what an opportunity to help get me out of my, you know, space. (Stanley)*

*... my anxiety level reduced. (Cosy)*

Some participants also found that focusing on the present moment helped them reduce worry and rumination:

*So much of what makes it more difficult is adding to it by envisioning what it might become in the future, what could have been avoided in the past, when it's already happened. I spent a lot of time reflecting on what might have been or what could be like. That's a lot of*

*energy... I find myself doing it. But then, when I get out of my head, and just more in the present moment, it's not so, earth shattering... you just keep going. (Lorraine)*

However, the most reported effects of FB were a sense of calmness, peace, and relaxation:

*It just sort of has a quite a calming effect (Terry)*

*It's amazing. Like I just feel at peace. (Rowen)*

*... very relaxing. (Stephanie)*

Overall, participants expressed that FB facilitated positive emotions and feelings of revitalisation:

*I feel good. It gives me a sense of... a whole bunch of positive emotions. I feel joy, passion, admiration. (Bob)*

*I'm just more happy... (Buttercup)*

*That was quite refreshing.... helps regenerate. (Terry)*

### **Theme 3: The Branches: Opening up to the world**

This theme focuses on individuals opening up to building reciprocal relationships with others, deepening connections with nature, and experiencing a spiritual awakening to universal interconnectedness. Participants described enriched interpersonal connections facilitated by the FB community and immersion in natural environments, where communication flows more freely. This deepening of relationships is underpinned by personal growth, including heightened empathy, compassion, and acceptance of self and others. Moreover, participants expressed a profound sense of belonging and respect towards nature, experiencing awe, gratitude, and spiritual awakening. Through recognising the intrinsic value of all living beings and embracing a sense of interconnectedness, individuals navigated towards a more expansive understanding of the world and their place within it.

***Sub-Theme 1: Building reciprocal relationships with other people***

This sub-theme illustrates how a secure base that nurtured a strong sense of self and inner peace, as described in the first two themes, led to several personal changes, deepening participants' connections with others.

Participants shared that feeling better about themselves, as outlined in theme two, helped them find the courage to open up their authentic selves to themselves and the world and communicate with others more effectively. As discussed in theme one, the feeling of safety in the inclusive FB environment could be the catalyst for this:

*Being more willing to be open, not only to myself but with others on different levels as well as a personal level... I'm starting to look people in the eye again. (Feather)*

*The more I feel better about myself, the more I'm able to communicate more effectively. You know, your friends or your family. You just do a better job when you're more centred with yourself, when you're okay with yourself. It's when you're not where you're just like... closed in, you don't communicate as well. (Michelle)*

Participants also identified an increased reflexive awareness of their behaviours and their impact on others, in keeping with the increased awareness of the self described in theme two:

*Just paying attention to my own responses, to my own behaviour. (Feather)*

*I'm just starting to realise that it isn't just about me. It's about how my actions affect those around me too. (Marley)*

In addition, participants noticed themselves becoming more patient and willing to listen to others. This resonates with the slow and mindful presence described in theme two:

*Being more patient and listening. (Cosy)*

Participants also described the effect that active listening without jumping to offer solutions can have on building trust and rapport with others, affording them a space to share:

*... I'm realising what kind of power and wisdom there is in just listening... And, you know, it's a hard thing to do, because I'm always looking at how can we fix this or fix that... But, really, a lot of times, it is just listening. And that's all it takes. That's all sometimes some people want. And, also, it really helps to build trust and rapport. ... If you can even just leave one or two seconds of space. Even the people who might not often talk do... Just give them a chance instead of everyone competing to talk all the time over each other.... (Marley)*

Furthermore, participants shared feeling less judgemental and more empathetic and compassionate towards others. This mirrors the non-judgemental caring embrace they received from nature and the FB community discussed in theme one:

*I guess not to be as judgmental... I have empathy for others. (Stephanie)*

*And there used to be a lot of judgment around it... There's just like more compassion for their experience on the planet, more compassion for how they got what they got ... I feel more open and understanding. (Ayla)*

Similarly, participants identified that they have become more accepting of others despite differences. This corresponds to participants being accepted by others and nature and accepting themselves, as discussed in the previous two themes:

*... willingness to accept... differences... It's allowing each one of us to be. In whatever venue you meet someone, just to let everyone be. (Feather)*

Following the personal changes described, participants described feeling more closely connected to current social networks and more inclined to build upon these connections by approaching or spending more time with others. This included the FB community, personal relationships, and even strangers, both remotely and in person:

*I really did not think I would ever feel a connection to strangers over an internet group, but I did... I think I definitely feel more like I can approach people, and I feel like my relationships are a little bit deeper... I find I'm definitely seeking out more connection and wanting that, recognising that warm feeling that I got, that has been missing in my life a lot. (Rowen)*

Participants found that connecting with others in nature was particularly profound, surrounded by a sense of universal energy:

*Being in nature with other people, does something indescribable... it changes the interaction. Part of that could be because there's more witnesses, you know, like of the other beings and their energies. Even if there's no awareness for it. (Ayla)*

*... people are out in the parks, and then the squares... Even if you're not talking with people, you feel a camaraderie, and people are more likely to strike up a conversation... there's a different energy that doesn't happen when you're just in a building, just some concrete. (Lorraine)*

Finally, participants observed that nature, including animals, acts like a bridge facilitating interaction between people of different abilities:

*As a person with the disability, when you're in public, I can sometimes feel self-conscious because people are always looking at me, or they just don't know how to react or respond... It can be very isolating... I was a handler of a service dog for over 10 years... Often, whenever I am in the public, I don't get eye contact, right. Just because people don't know how to interact appropriately, or just don't know how to do it at all. So, the dog acts as a social icebreaker. I think the same thing about nature, too. Because when you go in nature, people looking at trees, and sometimes they'll stop you and say: 'oh, look at that tree over there, or isn't it a nice day'... So, it can spark conversation, whereas in other scenarios people might be*

*a little less willing to talk to someone they feel uncomfortable about or because they don't know. (Monica)*

### **Sub-Theme 2: Deepening connections with nature**

This sub-theme examines how participants engaged in FB to connect with nature, detailing their experiences, benefits received, how it enhanced their connection with nature, and obstacles encountered.

Throughout interviews, participants spoke about several ways they had engaged in FB. One of these involved urban FB - finding and connecting to the natural elements in cities:

*I have got the sit spot thing that I thought was impossible, because it's an urban area... there are lots of places where you can go, even if it's just sitting under the one tree that was on this very busy street... I can experience elements of nature without going out into a nature preserve. (Cosy)*

*I can't always afford to go to the national park, but I can afford to go to urban natural parks. (Taryn)*

Taryn alluded that some people may face financial barriers to accessing nature outside cities, which relates to the lack of accessibility for PWDs covered in theme one. Others spoke about practising nature connection indoors with plants or looking outside through windows:

*... bringing in a plant, and even at one point I had an artificial plant, but being able to really feel it. (Cosy)*

*Like the cedar trees out my window. I can watch just like the way the leaves sway in the wind, and that being enough. (Rowen)*

Cosy's experience that nature connection is possible without real natural objects present supports the idea of visualisation aiding accessible FB, as detailed in theme one. However, Feather



noted that sensory visualisation can pose challenges and evoke bitterness in people with acquired disabilities who have lost certain sensations. She, thus, advised that “*compassion*” is necessary for such practices:

*I'm wondering whether seeing those videos and pictures act similar to some people that might no longer be able to feel by touch... or access those places, but they have memories of that, and through those memories, are able to access those sensations as well?... it depends on how they are responding to their current situation. There are different stages that people go through after they have an injury or acquire a disability, and some are very graceful and wise about it. But there can be an element of bitterness... (Feather)*

Participants also discussed online group sessions as another way to engage in FB indoors. They were surprised that online sessions felt as powerful as in-person sessions, offering fewer distractions that can occur on-site. Overall, people found that online and in-person FB offer distinct but complementary experiences:

*The videos were so compelling... I was surprised how powerful they were, focusing on the images... I was in a quiet space, and I could just focus on whatever the images or the video. I felt fully present... The in-person... even though we were physically in the park, there were also a lot of other things going on, other distractions. I haven't done a ton of in-person to really do a fair comparison... But I found the online was just as powerful... I think I see them as being different and complementary. Not necessarily one better than the other. (Lorraine)*

When considering the elements of online FB, Michelle suggested that the group aspect could be the key mechanism of change: “*I think online, it could be part of the group thing, just because you're not really outside, even though they have images, stuff like that.*” This aligns with the group benefits described in theme one.

Both online and in-person programs were valued and appreciated, even by those who preferred in-person programs:

*In the beginning, I was quite sceptical and I still don't feel as strong of a connection virtually as I do in nature. But I can see how it has helped so many other people, and that has helped me to appreciate how important it is. (Bob)*

Some participants also described travelling to connect with nature in natural environments:

*But just going down this paved path in my chair and you can hear the bird singing and I'm going down onto a dock on this lake. And you're off the grid, there's no electricity, there's nothing but birds... (Stanley)*

Finally, participants spoke about connecting to nature through micro-moments as an alternative to extended FB when lacking energy due to a busy schedule:

*My job can be pretty stressful... and at the end of the day, often I have no energy, I just want to go home... just finding those micro-moments. Like, I'm going to stop and smell these lilacs... That sustained me, and I could have tons of little moments like that throughout the day. (Rowen)*

Rowen's comment implies that various life demands and lack of time or energy can hinder FB despite motivation. Ayla supports this: *"This past year, I was really struggling to connect with nature. I was having a really hard time, and life was busy."* Thus, the micro-moments detailed above may offer a solution.

Regardless of the type of FB participants were immersed in, they shared that they were doing so mindfully—fully present, accepting nature as it is without judgment. This suggests a reciprocal relationship with nature, which offered its unwavering acceptance to participants, as described in theme one:

*There's like a garden along the side of the street, and sometimes I would just walk along there and just focus in on what I was seeing in a way I wouldn't have done as much before... when I'm communicating with nature, it is not about an agenda, it's not about rushing to get something done. It's just more about being... just enjoying the company of. You're just enjoying the beauty, the calm, the intricacy. (Lorraine)*

*And just that sort of openness and 'non-judgementalness'. Not striving to look for something or find, you know, a beautiful image. (Rowen)*

Participants noted that an active mind and critical self-talk can be barriers to mindfulness practice, which can lead to shame when nature connection doesn't occur as expected:

*Sometimes, my mind gets in the way... And I'll be telling myself, well, you should sit here for 20 min, but 5 min go by, and I'm like, 'blah blah blah', you know... And then I leave and feel shame about it... like, you should have connected more. (Ayla)*

As Feather previously pointed out, this once again highlights the need for “compassion” when engaging in FB.

Participants also shared how experiences of practising mindful engagement with nature have led to an increased awareness of natural surroundings and a keen noticing and appreciation of small details:

*I think it makes me more aware of my surroundings. (Monica)*

*And noticing more about the bug, like, look at the iridescence, oh, it's got these tiny, beautiful wings! Going a lot deeper than I normally did in the past. (Rowen)*

Participants expressed how noticing such small details allowed them to interpret signs of nature's communication with them, fostering a meaningful relationship:

*... all types of things send us messages. Trees turn their palms up, and they turn them down, and if you're watching them, you notice, you can quickly know if it's going to rain... (Cosy)*

*Usually, whatever I'm going through, nature will have an answer for it... like a response... for my internal world. (Ayla)*

Participants found that such a mindful nature connection helped them recall fond memories of mindful play in nature as children and reconnect with their inner child:

*I was a very happy kid, very light-hearted and free spirited and spent a lot of the time in nature with friends and family. And I think this helped me remember the good times of being a kid, it not having as much responsibility and pressures as adulthood... I'm more just sitting back and looking at nature in greater detail, which is something that I used to do quite a bit when I was younger and forgot over the years... But now, I'm remembering and thinking back to what I was as a child. (Bob)*

People concluded that nature and mindfulness complement each other, with mindfulness enhancing their connection to nature, offering an external focus of attention supporting the mindfulness practice:

*I think they're both equally important. Like, you can walk in a forest and not see a single thing. And you can also lie in your bed and meditate and feel connected, but it's much easier to do it with a tree. (Ayla)*

*I'm noticing in the natural world, it helps to extend my focus better. Sometimes it's very hard to just focus only on the breathing. Sometimes, it helps to focus on something external.*

*(Lorraine)*

Through such FB practises, most individuals felt a deeper connection to the natural world, including various objects and animals, in indoor and urban settings. This corresponds to them feeling closer to other people, as detailed in sub-theme one:

*Like, more of a connection with all things, whether it's a tree, a squirrel, or whatever... at a much deeper level. It was more superficial before... I even stop to look at different animals in the eye now. Just to connect with them, and say hello... We have lots of crows here, and they remember you... I remember them. I'm just sort of making more friends with everyone.*

*(Marley)*

*The connection is deeper... more solid. And that surprises me because I live right in downtown... And yet, I felt more connection to the natural world, even though I live in a very busy city. (Lorraine)*

*And then I started feeling fond and attached to this house plant and thinking about and looking at the leaves. (Cosy)*

Given these benefits, people spoke about wanting to spend more time with nature and actively choosing to do so. This is parallel with pursuing more time with other people, discussed in theme three:

*I live right on the river. And there's a walkway right along the river, and there's flowers, and sometimes birds. And it is crazy to live here and not use that resource... .. Even if it's pouring rain... I guess I spend more time in the river walk. (Taryn)*

*... my wish to spend more time definitely has increased... Every morning, I go out and tend to or just sit with my garden. (Stephanie)*

Despite the outlined benefits, participants noted preconceptions about FB from their family and friends, some of which they even held themselves before joining EcoWisdom:

*And people are always like, oh, nature connection online, that doesn't make sense. And I'm like, I didn't think it would make sense either, but it did! (Rowen)*

*I thought, when I heard about it, it was really kooky, far-fetched... the practice that they introduce of developing metta with a tree and feeling the tree. Several months before, I*

*thought, this is ridiculous, these people are really crazy, you know. My friends told me, what people have you caught up with, you know. Do they bathe naked in the sun? (Cosy)*

Such preconceptions might deter people from trying FB or shame those who engage in it.

***Sub-Theme 3: Spiritual awakening to the universal interconnectedness and appreciation of all forms of life***

This sub-theme details participants' profound feelings of universal interconnectedness. It highlights their love and appreciation of nature, viewing it as a sentient living being, a manifestation of God or a higher power, which deepened their spirituality and faith.

Following their FB experience, participants shared a deep sense of interconnectedness and interdependence with all living beings, regardless of the differences or species. Seeing themselves as an extension of nature, participants realised the reciprocal impact they have on one another:

*It helps me remember that we are all connected in some way, shape or form, and nature. I think the network of roots underground, where everything is intertwined, and I feel like there are some parallels to people and animals in general... we're all working together in some capacity... even though we are unique, there are a number of similarities. We all bleed, we all hurt, we all laugh... Everybody is a whole, the entire world... we are all one. (Bob)*

*I'm starting to realise that beyond my own family, regardless of race, religion, colour, all of those things, we're really interconnected... we don't have to be in the same job, we don't have to be the same gender, we don't have to be the same religion, or the same family, or even the same species, to be able to have that impact on each other... And I don't really see so much the separation between humans and the other species, like I did... a lot of us think, humans kind of being at the top of the chain, everybody else is there to serve us. Well, it doesn't really work like that. Because if humans keep taking, taking, taking, there's going to*

*be no humans left... the one thing we have in common as living beings is life. And we're very interdependent on each other for life. (Marley)*

*...when I was a child, I saw myself as an extension of nature... I moved away from that as I got older, got busy, caught up in trying to make a living, raise a family... (Lorraine)*

Lorraine's comment might explain why children can naturally interact with nature more mindfully. Marley's and Bob's comments on interdependence suggest that every part of nature, including themselves, holds intrinsic value. Stephanie elaborated how this realisation helped her feel valid and important – a feeling often unavailable for PWDs, who are frequently restricted by ableist and disablist societies:

*I'm so fascinated by the tiny thing... I can see that it has an importance in the grand scheme of things. And then... subconsciously but also consciously, I reflect that even though I may feel small, it doesn't change my value in the world. And that's really huge, because I've struggled with that so much. Because I've been so sick, and I haven't followed a career path, and I don't have money, and I don't have a house... I have felt invisible, ineffective and unimportant in the world in general, due to the isolation my illness has caused. When I stand with a tree and am now able to feel its existence, using my new skills and understanding, I am profoundly aware that I exist too. I have become valid and important. (Stephanie)*

Subsequently, participants shared how their awareness of nature's value has increased:

*I'm just more aware of what nature can really bring to our planet... how important it is. Like trees, and all those things that we have, that we take for granted and what it does to help our ecosystem and what it does for our health as well. (Michelle)*

People also expressed appreciation, gratitude and love for all beings:

*I have a deeper appreciation and kindness for all living beings... But now I'm feeling also more a sense of gratitude. I don't think I felt nearly as grateful at all... not just my plants, but all the creatures around me... (Marley)*

*And people express, you know, in such a short time, people they've never met... community love... It's amazing. (Stephanie)*

Additionally, participants described how a reminder of universal interconnectedness offered a heightened sense of awe towards the natural world:

*... even going out at night and just staring at the stars, and just kind of thinking how little we are in the big perspective, too. (Buttercup)*

*I am seeing it from a human point of view, but knowing that there's another world going on right beside me there [in nature]... like a reminder to me that we don't really know anything... it's very limiting just to call it Earth. Because it's way bigger than Earth, you know. It's way bigger than one galaxy... It's beyond what we really know. (Feather)*

Finally, participants' views of nature shifted due to these experiences and realisations. Many spoke about viewing nature as a living being they can communicate with:

*... like there is a spirit of the lake, right? And I would wanna honour that spirit before I'm going into the water and running my hands through the water in a different way. Like, I'm not just touching water. I'm touching up being. There's a relationship there. (Rowen)*

*I feel like I can talk to the trees. (Monica)*

Some saw nature as a manifestation of a higher power:

*I don't think any of that could have arrived without a higher power. You see beautiful flowers and birds. (Taryn)*

While others viewed it as an incarnation of God and found their faith deepened:



*... When I'm in the natural world, it's an incarnation manifestation of some aspect of God... I think of God being in the natural world... I think it's deepened... in terms of my own faith.*

*(Lorraine)*

Finally, participants expressed a sense of spirituality about the natural world:

*The mystery in it is profound to me, for sure... The beauty is so complete to the micro level, and the grand level and the macro. I'm completely mystified. But I don't really ascribe it to any power or religion. I would say that there's some spirituality in it for me. (Stephanie)*

#### **Theme 4: The Leaves: Giving back – preserving the earth and all living beings**

This theme describes how FB heightened participants' awareness and empathy toward global suffering, instilling a sense of responsibility to preserve the natural world. In response, they've taken various environmental actions and encouraged others to connect with nature. Participants also prioritised self-care while maintaining their value in helping others.

Participants first described how participation in FB made them more aware of environmental suffering caused by humanity:

*We can see climate change everywhere... I was also feeling half asleep to what's going on in the world. I was maybe too busy or didn't prioritise to make the future of our planet a priority... I'm starting to question if we're going to make it as a species, and I really didn't question that before. I figured that humans were smart enough to figure this out. But, I think, unfortunately, a lot of humans are greedy. And it's human greed that is creating the biggest problem. (Marley)*

For some, thinking about the climate crisis for too long brings deep pain, which shows the deep attachment and care people may have developed for the natural world:

*It also causes a lot of pain, because there's a lot more grief now, because the world's just keeps hurting. Hurting like the thing or the people... that I love... And that is deeply painful, very hard to look at, very hard to be with... (Ayla)*

Consequently, participants shared an increased responsibility to preserve nature for the future:

*... we need to take care of it better... we need to preserve our natural environment. So how do we do that? Which is something I don't think I really thought very much... People don't think about it until it directly affects them, and then it's too late. (Michelle)*

*I don't want to lose this, I want my [child] to experience all this, like, it's our planet is so beautiful and so vast... I really want to get involved more. (Rowen)*

Consequently, showing more care towards and preserving life in the natural objects around them was of importance:

*Like, right now, we're always watering our yard or our plants and try to get them to grow... I just put all my thoughts into positive energy for the plants... Just making sure that all the plants are still alive at the end of the day and at the end of the season... Or just caring for house plants as well... I am keeping it alive. (Buttercup)*

Additionally, participants discussed taking action to combat climate change, however big or small, including educating others about its importance:

*In very small ways, in my own activities. I don't want to damage things... I'm more aware. For instance, of how that is the moss and the algae, it's like hundreds of years old... so I don't necessarily want to step on it... (Stephanie)*

*... now I feel that it's even more an obligation not to just do what I can for myself or around my house, but to even talk to other people and educate them. Including, probably, most especially, the young people, because they can influence their parents. And they're usually*

*more open to adapting and really listening. And really, it's their future more than mine...*

*(Marley)*

Marley's remark suggests that environmental action initiatives must focus on the younger generations as they are more likely to adopt new learning. This idea is supported by participants who had environmentally friendly upbringings sharing how they have sustained childhood practises:

*I've always had... we composted before composting was popular. Yeah, we reduce, reuse. But that was just us as a family. (Monica)*

Similarly, participants spoke about encouraging nature connection to others by either modelling it or sharing their FB experiences:

*I think through the programs, just really knowing that connecting with nature and modelling that for my [child], modelling that for other people, knowing that as more people come into a relationship with nature and respect nature, that's gonna be enough to make a shift... (Rowen)*

*I've been able to talk about this program and make people feel excited. Oh, if you're feeling that, what's it about again? What's that thing you're doing again? I know it has benefited me in a way that will help me to introduce it to people. (Cosy)*

Furthermore, recognising that nature is not always accessible for PWDs, participants expressed a desire to find ways to increase nature accessibility and to create more green spaces in cities:

*I think to bring that forward to like city council, or something... they have all these trails that you can take your walker through, or your wheelchair... I want to call them and see if we can do something, maybe bring other people to these trails who wouldn't normally access them, because they're already there... (Rowen)*

*There has been a shift in how I view the city, the concrete world. I feel like there's a huge need for more natural spaces in the city. I think people are really starved for it... I feel like there's missed opportunities to create those spaces... And it's made me think about, how can we create more community gardens, more spaces, where people can come and feel more connected to nature... (Lorraine)*

Aside from preserving nature, participants described that the FB program taught them the importance of self-care, changing their perception of it as selfish. This was prompted by adopting a self-view as a valid and important part of the ecosystem, discussed in theme three and increased self-compassion, detailed in theme two:

*It was the program that taught me so much about self-care, which I already kind of knew about, but I didn't really practice it that much... So now I make the time to put some activities for me first, but I also realise it's not being selfish. It's quite the opposite. (Marley)*

To overcome the view of self-care as selfish, participants reminded themselves of the necessary balance: taking care of themselves first to assist others effectively:

*But we all know you can't help someone unless you help yourself first... (Marley)*

As part of self-care, participants also expressed feeling more assertive with others to meet their needs:

*I felt confident in expressing what I did want and what I did not want. (Cosy)*

*I was assertive but not aggressive... it's more about learning to say no... in a nice, polite way. (Marley)*

This aligns with participants feeling better able to recognise their boundaries in helping the world, preserving their limited resources:

*I know that a lot of it is corporations and big things that are out of our hands that are causing some of the major problems, and I can't fix all that. And, you know, when you're on a fixed income, you can't always buy organic or donate the causes that you want... I really want to get involved more. I still struggle with the amount of time and energy I have.*

*(Rowen)*

In addition to increased care for the planet and the self, this extended to feeling increased care towards other people:

*I think the EcoWisdom allows us to think about not just us but people around us as well...*

*(Michelle)*

Some even realised helping others as their calling:

*Help that I would give to people... that's what I was put here for. (Taryn)*

Recognising the importance of and feeling the benefits of self-care motivated them to encourage others to care for themselves, too:

*I often encourage people to take a break, to stop working so much, or, you know, to slow down themselves... I go deep into conviction that it is very helpful... And so I get a bit more pushy in advocating it for others. (Terry)*

Overall, participants shared an understanding that although one person cannot change the entire world, every small act of kindness counts and spreads widely because everything in the universe is deeply interconnected, as illustrated in theme three:

*I mean, I can't change the whole world. All I know, as we say, everything's interrelated. So, you can buy a cup of coffee for someone and pay for it, or you can smile, and you can do this or that. But I do know that if one does one thing to help another, it simply multiplies. So, all I can do is my part in this huge universe. (Marley)*

### Member Reflections

Six participants offered member reflections (Tracy, 2010), as described in Chapter Three. This section provides an overview of participants' feedback (Appendix V) on the results summary and highlights key points that provide new insights or critical reflections on the findings presented in this chapter.

In their feedback, participants shared that they enjoyed participating in this research and appreciated the opportunity to understand different viewpoints through the results summary, which fostered a sense of community. They felt the summary accurately captured and resonated with their experiences, finding it validating to know that others had similar experiences. The visual map was particularly helpful in comprehending these findings. Additionally, reading the study's findings seemed to inspire participants to continue their engagement in FB. Finally, participants expressed gratitude for this research and for amplifying the voices of PWDs and communicating their challenges and needs to a broader audience.

Lorraine shared that the term 'self-esteem' is simplistic, as it fails to capture the complexity of the self, which comprises many parts that are esteemed differently. She believed it is more about self-connection and self-acceptance than self-esteem. Although these elements were not named in the results summary, they were included and elaborated upon within the 'increase in self-esteem' sub-theme under the second theme, thus acknowledging Lorraine's comments.

Connecting with the natural world through FB improved Lorraine's self-connection by raising awareness of previously unnoticed aspects of herself, such as mood and physical sensations. This supports the findings that it is slowing down, mindfulness, and attunement to nature that enhances self-connection through increased awareness of one's internal states, as discussed in the first sub-theme of theme one. Lorraine also observed that her perception of the natural world reciprocally mirrors her internal experiences, which supported accepting both internal and external experiences.

This insight clarifies the process through which accepting imperfections of nature supports accepting one's own, described in the first sub-theme of theme two, suggesting a reciprocal dynamic.

Additionally, Lorraine added that despite many benefits, there may be various barriers to in-person FB programs, such as geographical barriers, which online meetings can overcome, further emphasising the importance of both types of choices to PWDs.

Moreover, Lorraine shared that her involvement in FB increased her awareness of Indigenous people's care for the earth, stressing that it is everyone's responsibility. This insight adds new information to the fourth theme of the study's findings, highlighting factors that enhance people's motivation to preserve the earth. Lorraine also shared seeing the earth and all the natural world as "*home*", which enhances the findings outlined in theme one, suggesting that nature offers an environmentally secure base.

Furthermore, Crystal raised an important point that not all PWDs have health difficulties. This suggestion was discussed and reflected upon with the consultants. We acknowledged that, although we carefully considered what seemed to be the most inclusive term to describe the research population when designing this study, there are diverse ways in which people understand and describe disability. The term 'physical health difficulties' can imply the MMD perspective, which focuses on the physical health status, which might be relevant for some people but not for others who may not view themselves as unwell. Thus, this term can be viewed as a limitation of this research, and it is crucial for future studies to use language that respects and encompasses the varied experiences of their research population, such as the "*variety of disabilities and/or health challenges*", as proposed by Crystal.

## Chapter 5: Discussion

### Chapter Overview

This chapter summarises the study's key findings, contextualised within theoretical frameworks and existing literature. It also discusses the study's implications and recommendations alongside acknowledgement of limitations and provides suggestions for future research. Finally, the chapter offers conclusions on the research.

### Summary of Findings

This research aimed to explore PWDs' experiences of change in connectedness through FB. The central question was: "What are the people with disabilities' experiences of change in their sense of connectedness through forest bathing?" Three sub-questions focused on connectedness to the self, others, and nature. The RTA led to the generation of four themes that provide insight into these questions: 'The Ground: Establishing a Secure Base', 'The Trunk: Cultivating a Strong Sense of Self and Inner Peace', 'The Branches: Opening up to the World', and 'The Leaves: Giving Back - Preserving the Earth and All Living Beings'. Overall, the findings show that accessible FB programs enhance connectedness to self, others, and nature, as well as universal interconnectedness among PWDs. FB fosters a sense of belonging, reduces isolation, and promotes personal growth, community building, spirituality, and environmental stewardship.

### Relevance of the Findings to the Literature

#### *The Ground: Establishing a secure base*

Participants highlighted significant barriers posed by societal structures (e.g., lack of accessible nature experiences for PWDs). This aligns with research showing that the ecotourism industry is inadequately accommodating PWDs during visits to wilderness areas (e.g., national parks; Chikuta et al., 2018; Groulx et al., 2022). Participants reported societal exclusion diminishing their sense of belonging and triggering a sense of isolation, leading to adverse psychological effects, such



as depression. Similarly, Corazon et al. (2019) found that the lack of accessibility in natural areas and observing others engage in activities individuals cannot participate in causes feelings of exclusion and feeling like an outsider. Baumeister and Leary (1995) suggest that humans have an inherent need to belong, and a lack of social connections negatively impacts health, adjustment, and well-being (DeWall et al., 2010; Eisenberger et al., 2003).

Participants contrasted previous exclusionary experiences with the accessible and inclusive EcoWisdom FB group program, which offered adaptable ways to nature-connection. This fostered a sense of community and belonging with others and nature, helping to mitigate feelings of isolation. This supports the SLR, where participants reported "a deep sense of belonging to a community and the earth" (Duffy et al., 2020) and reduced isolation and loneliness (McEwan, Potter et al., 2022) through FB. Corazon et al. (2019) similarly found that accessible nature sites promote feelings of belonging or 'insider-ness' and community among people with mobility impairments.

Within these programs, participants noted that the authentic, accepting, and non-judgemental attitudes of nature and fellow group members fostered a sense of safety. This resembles SLR studies, indicating that feeling non-judgemental acceptance from others (McEwan et al., 2023) and nature (Poulsen et al., 2016) helps people feel safe. Feeling safe and protected is a critical prerequisite of secure attachment (Booth et al., 2003). Thus, from the perspective of AT (Bowlby, 1973), it is likely that the FB environment provided people with a secure base – a safe and secure attachment figure essential for personal growth and relationship building (Geller & Porges, 2014; Mikulincer et al., 2013). This supports Evans et al. (2023) comparing natural environments to "a safe haven" that enabled participants to explore the world.

### ***The Trunk: Cultivating a strong sense of self and inner peace***

The security of the FB environment enabled participants to be themselves, supported by McEwan et al. (2023). Similarly, broader research indicates that secure attachment figures increase self-authenticity (Gillath et al., 2010). Additionally, adopting a slow, mindful presence through FB

facilitated a deeper connection with themselves and heightened awareness of internal emotional, physical, and cognitive states. This is consistent with SLR studies (e.g., Duffy et al., 2020; Lee & Son, 2018) and previous research suggesting that mindfulness practices in natural settings enhance self-awareness (Clarke et al., 2021). Corresponding with Kabat-Zinn's (2013) mindfulness principles, participants approached their internal observations with acceptance, fostering fuller self-acceptance and self-compassion. This aligns with research suggesting mindfulness techniques help develop unconditional self-acceptance (Thompson & Waltz, 2007). Caldwell's (2014) practice of 'bodyfulness' suggests that embracing one's body as interconnected with thoughts, emotions, and experiences is particularly empowering for those whose bodies have been marginalised or devalued. For example, McEwan et al. (2023) shared how medical professionals objectify and compartmentalise people's bodies into parts or functions, which is dehumanising and separating from an integrated view of the body. Thus, holistic acceptance is an act of political resistance and a means of psychological healing and spiritual awakening that transcends societal labels and limitations. Self-acceptance was further enhanced by relating to nature's imperfections, aligning with studies showing that nature metaphors allow people to reflect on their experiences in a comforting way (Corazon et al., 2011; Jordan, 2016).

The study also found that a supportive environment, shared experiences with community members, and living authentically increased self-esteem, self-confidence, and inner security while reducing societally inflicted shame. This supports SLR results that community ties boost self-esteem and self-confidence (Lee et al., 2019). This mirrors previous research showing correlations between secure attachment with others, higher self-esteem, and lower levels of shame (Passanisi et al., 2015). Correspondingly, the sociometer model posits that self-esteem indicates the degree of social acceptance one perceives in one's quest to belong (Leary et al., 1995).

These experiences led participants to discover authentic selves that transcend disability. Self-discovery through FB was also demonstrated by Lee et al. (2019). Hansen et al. (2017) suggest that discovery of the authentic self can occur via guided FB, in which individuals, separated from their

ordinary lives, reconnect with nature's supernatural worlds, leading them into a 'liminal' space. This is a space in-between or a suspended state of partial thinking (Turner, 1982), where one must release preconceptions of the world until calm and mastery develop. Such liminal times support transformative journeys to authentic selfhood by offering a clear mirror of nature undistorted by social expectations (Jung et al., 2009). Thus, embodied nature connection presents a path to authentic self-discovery. Leary (2003) suggests that aligning with one's authentic self allows a person freedom to be themselves and engage in personally fulfilling behaviours.

Subsequently, participants felt empowered and motivated to overcome learned helplessness imposed by societal limitations associated with disabilities and focus on their strengths and possibilities instead. Similarly, Farkic et al. (2021) reported that FB participants experienced empowerment, strength, and willpower. Furthermore, the SLR highlighted increased motivation to adopt healthy habits (Lee & Son, 2018) and handle daily responsibilities (Evans et al., 2023). Additionally, supporting the SLR and previous research, FB provided participants with tools to manage life's challenges as it enhanced capacity to reflect (Corazon et al., 2018; Farkic et al., 2021), creativity (McEwan, Potter, et al., 2022) and emotional regulation (Evans et al., 2023; Hill & Updegraff, 2012) leading them to feel deeply grounded (Corazon et al., 2018; Wuyts, 2024).

Overall, these developments resemble Klussman et al. (2020) three components of self-connection: self-awareness (e.g., of one's thoughts and feelings), self-acceptance (e.g., of internal states), and aligning behaviour with this awareness (i.e., congruence between internal states and external actions).

Importantly, FB improved physical and emotional well-being (Duffy et al., 2020; Li et al., 2007; McEwan et al., 2021), including reduced stress, anxiety, depression, worry, rumination, pain, tension, breathlessness, blood pressure, and increased feelings of calmness, peace, relaxation, and rejuvenation. This supports research advocating the SRT (Ulrich et al., 1983), indicating that nature exposure (including digital) facilitates stress recovery, linked with a reduction in the above-named

negative symptoms (Wang et al., 2016; Capobianco et al., 2018) by enhancing the parasympathetic nervous system associated with relaxation (Porges, 2011) and positive focus (Kaufman, 2015), related to the increase of the detailed positive symptoms (Mednick, 2022).

Thus, participants proposed that the healing powers of nature can be a good alternative to medical treatment as effectively shown within Indigenous medical systems and traditional medicines (e.g., Chinese medicine, Kampo, Ayurveda, or Unani) that have been practised worldwide for millennia (Yuan et al., 2016).

Moreover, mindfulness and nature, which represent core elements of FB (Li, 2018), were seen as reciprocally reinforcing, supporting previous studies suggesting that this combination enhances therapeutic outcomes (Lymeus et al., 2018; Timko et al., 2020). Nature was especially helpful in facilitating mindfulness practice, which supports research demonstrating that natural objects enable sensory engagement with little effort (Payne & Delphinus, 2019). Thus, FB may be an alternative approach for many individuals who struggle to engage in mindfulness practice alone (Corazon et al., 2018; Van der Kolk et al., 2014).

### ***The Branches: Opening up to the world***

The personal developments described above led participants to feel better within themselves, encouraging them to present authentic, imperfect selves to others, connect more deeply with existing social circles and seek new connections. Similarly, SLR studies demonstrated stronger social connections (Duffy et al., 2020; McEwan, Collett et al., 2022) and a desire to expand these (Lee & Son, 2018). Quantitative research also supports increased social connection through FB (Kavanaugh et al., 2022). The Supportive Environment Theory (SET; Stigsdotter & Grahn, 2002) explains this by linking the individual's mental strength and capacity to perform executive functions with the need for supportive environments. According to SET, when mental capacity is weak, the need for a supportive environment with low demands is high. As capacity grows, their ability to handle more complex relationships with others increases (Grahn & Stigsdotter, 2010).

Participants demonstrated an increased reflexive awareness of their behavioural impact on others. They became more patient and willing to listen without offering immediate solutions, which helped build trust and rapport. Participants also felt less judgmental, more empathetic, compassionate, and accepting of others despite differences. The latter two findings support those from the SLR (Evans et al., 2023; Lee et al., 2019). These findings are further supported by McEwan et al. (2021), showing that FB was effective in increasing compassion for others. This aligns with the intrapsychic humanism literature suggesting that secure attachment relationships, which FB may provide, are crucial for developing an internal source of well-being, which serves as a foundation for accurate self-awareness and compassionate treatment of others - treating others the way we were treated (Pieper & Pieper, 1990, 1999). This demonstrates the capacity of FB to cultivate reciprocal and compassionate community connections.

Connecting with others was especially impactful in natural environments, supporting SLR findings (Poulsen et al., 2016) and research indicating that green spaces enhance a sense of social safety (Maas et al., 2009). This could be viewed in accordance with the SRT and the TSM soothing system (Kotera et al., 2022; Ulrich et al., 1983). A unique finding is that natural environments and objects, including animals, act as social bridges or 'icebreakers' between PWDs and strangers without disabilities, demonstrating nature's ability to foster connections despite differences. This relates to Wood et al. (2015) showing that pet owners are likelier to make new social connections in their neighbourhood than non-pet owners.

Participants reported that FB strengthened connections with other people and deepened their bond with nature, increasing their desire to spend time in natural environments. These findings align with SLR outcomes (Evans et al., 2023; Lee & Son, 2018; McEwan, Potter, et al., 2022). This supports the Biophilia Hypothesis, which posits that humans have an innate affinity for natural environments, actively seek contact with nature and feel better when immersed in nature (Kellert & Wilson, 1993).

Both online and in-person FB programmes were valued, each offering distinct yet complementary experiences. Similarly, studies comparing both formats show improved positive affect and well-being, although in-person FB has greater effect sizes (Markwell & Gladwin, 2020). Participants also highlighted that the use of mirroring in online photos and videos aided imagery. Mirror neurons activate when someone acts and/or observes someone else performing the same action (Berrol, 2006). This supports McEwan et al. (2023), showing that mirroring can be effectively employed in virtual FB programs. This is particularly helpful for people with specific disabilities who cannot access these sensations due to a bodily impairment or lack of accessibility to natural spaces enabling it.

Moreover, participants engaged in FB beyond the program, including mindful nature connection in urban settings, indoors online, with plants (natural or artificial) or looking through windows, and using nature sensory visualisation meditations. This implies that having a range of accessible options may facilitate continuous engagement in FB. Having alternative approaches helped participants address barriers to accessing FB practices in wilderness areas, including financial constraints, lack of time or energy, and an overactive mind. However, in accordance with McEwan et al. (2023), this study shows that sensory visualisation techniques require caution, as they may evoke complex emotions (e.g., bitterness) in people with acquired disabilities who may have lost certain physical sensations. Participants noted that self-compassion helps mitigate such feelings, in support of Wu et al. (2019), indicating that compassion can lead to forgiveness and the release of anger.

Mindful engagement with nature heightened participants' awareness of their surroundings and small details, enhancing their perception of nature's communication. This finding aligns with the SLR (Duffy et al., 2020; McEwan et al., 2023) and broader research (Hansen et al., 2017). Potentially, mindfulness led to an increased awareness of external events through attention control (Garland et al., 2015). Additionally, nature connection helped participants reconnect with early childhood memories of mindful play in natural environments. This is also consistent with SLR (Lee & Son, 2018;

McEwan, Potter et al., 2022) and other studies (Clarke et al., 2021). Clifford (2021) refers to this experience as: “Remembering is a type of personal origin story; it is the seed from which we grow into who we become” (p. 11), suggesting that it helps to connect to the sense of wonder experienced as children.

Consistent with SLR findings, FB led participants to experience a profound sense of interconnectedness among all living beings (e.g., Evans et al., 2020; McEwan, Collett, et al., 2022). This resulted in recognising the intrinsic value of all life forms, including themselves, and feelings of deep gratitude, love, and awe toward nature (Duffy et al., 2020; McEwan, Collett, et al., 2022). Kunchambo et al. (2017) suggest that nature becomes part of the self when it has value to the self and when emotional bonds are established. This aligns with the non-Western, socio-centric view, where selfhood is intertwined with social context and interdependent relationships (Shweder & Bourne, 1982).

Kinchambo et al. (2017) argue that the self-nature relationship evolves into a spiritual dimension when one sees themselves as part of nature. Indeed, participants reported perceiving nature as a living entity with which they could communicate, while others viewed it as a manifestation of a higher power or source of spirituality. This resonates with SLR results (Duffy et al., 2020; Evans et al., 2023) and broader research on spiritual awakening through FB (Hansen & Jones, 2020). The Gaia theory further explains the interdependence of all beings by suggesting that the Earth is a self-regulating, interconnected system composed of living organisms that synergistically maintain life, bridging scientific and spiritual perspectives (Reason, 2007).

***The Leaves: Giving back – preserving the earth and all living beings.***

Kunchambo et al. (2017) propose that the perspective of universal interconnectedness fosters a strong sense of belonging with the universe, where losing nature feels like losing oneself, thus cultivating behaviours to cherish and protect nature. Consistent with this view, participants reported awareness of environmental suffering and responsibility to preserve nature. Participants

took action to combat climate change, promote nature connection, and advocate for greater nature accessibility, especially for PWDs. This offers a unique contribution to the SLR and aligns with quantitative research demonstrating increased pro-environmental attitudes (e.g., McEwan et al., 2021) and promotion of pro-environmental behaviours (Oe & Yamaoka, 2023) through FB. Studies show that nature connection (Liu et al., 2022) and place attachment (Lee, 2011) – elements fostered through FB, correspond with nature conservation behaviours. However, participants with environmentally friendly upbringings shared no change but rather sustained pro-environmental practises since childhood, which reflects research suggesting that childhood nature engagement is sustained through life (Wells & Lekies, 2006).

Furthermore, participants reported heightened care for other people, extending to those outside the FB community, with some viewing it as their life's calling. This enhances SLR findings, showing peer support between group members (Lee et al., 2019). This also resonates with research demonstrating that FB increases compassion for others (McEwan et al., 2021) and pro-social helping behaviours (Song & Bang, 2017). This challenges the dominant narrative of PWDs only being able to receive care, demonstrating their active contributions to society.

Finally, participants shared increased self-care through FB, boundary-setting, and assertiveness. Self-care efforts reflect the SLR (e.g., Duffy et al., 2020; McEwan et al., 2023). A literature review of heart failure patients details that commitment to self-care is driven by interventions that motivate, empower, encourage informed decision-making, and take responsibility for one's self-care (Evangelista & Shinnick, 2008), which aligns with the principles utilised in the FB program in this study. Self-care efforts could also be viewed through the intrapsychic humanism lens mentioned previously, suggesting that our secure internal foundation extends to effective self-care and compassionate treatment of ourselves - treating ourselves as we were treated (Pieper & Pieper, 1990, 1999).



The findings of participants giving back to the Earth and community whilst sustaining themselves align with Cross's (2007) reinterpretation of Maslow's hierarchy of needs, typically represented as an eight-level triangle with fundamental physical needs at the base and self-actualisation and transcendence at the top (Huitt, 2007). Cross (2007) offers a reinterpretation through the Indigenous perspective of the Blackfoot Nation in Canada, who influenced Maslow's work (Coon, 2006). Cross (2007) argues that human needs are not strictly hierarchical but are highly interdependent, with cultural values and laws shaping personal and collective balance, reflecting relational worldview principles. This includes the Blackfoot Nation's emphasis on the individual's role within the community. Maslow (1966) recognised this limitation, noting that self-actualisation is insufficient on its own and must also encompass the well-being of others and broader social conditions (Kaufman, 2020). This supports Berger's (2008) claim that personal estrangement from nature, lack of community involvement, and diminished spirituality are key factors contributing to the modern-day prevalence of loneliness, anxiety, depression, low self-esteem, and disconnection. This study demonstrates that FB may offer an antidote to these experiences for PWDs.

### **Implications and Recommendations**

As outlined in Chapter Two, there is sparse qualitative literature exploring FB experiences, with even fewer focusing on social or nature connectedness (McEwan, Collett, et al., 2022; McEwan, Potter, et al., 2022) and only two that explore experiences of PWDs (McEwan, Collett et al., 2022; McEwan et al., 2023). This is the first qualitative study to explore connectedness in-depth amongst PWDs following FB. The study reinforces the themes and sub-themes from the SLR, supporting the validity and legitimacy of this study. It demonstrates that FB enhances connections to self, others, and nature (e.g., Lee et al., 2019; McEwan, Collett, et al., 2022; McEwan, Potter, et al., 2022) and that it is an effective intervention for enhancing personal and social well-being (e.g., Evans et al., 2023). Additionally, the findings extend the SLR in that FB promotes ecological well-being through increased responsibility and care towards preserving nature. This aligns with previous quantitative studies

showing increased pro-environmental attitudes (e.g., McEwan et al., 2021) and highlights FB's potential role in promoting sustainability and environmental stewardship.

The study also emphasises that personal, social, and nature-connectedness are fundamental elements of FB, driving such positive outcomes and holistic improvements in well-being. This signifies the importance of targeting connectedness in therapeutic practices to enhance well-being, especially for marginalised and isolated populations.

It also supports McEwan et al.'s (2023) study demonstrating that FB and its benefits apply to PWDs when made accessible, inclusive, and safe. This implies that increasing accessibility to nature and incorporating accessible FB programs tailored to the specific needs of PWDs into therapeutic practices can significantly enhance their overall well-being and foster social and environmental integration.

Finally, most FB programs in previous studies were conducted in outdoor natural environments, and this study contributes to the evidence base of virtual and home-based nature connection practises (e.g., McEwan et al., 2023).

### ***Clinical Invitations***

Firstly, this study calls for a shift in clinical psychology within the UK when developing interventions for PWDs. The field is dominated by the MMD (Barton, 2018), which perpetuates ableist ideas and fosters shame and segregation (Jóhannsdóttir et al., 2020). This study supports the SMD with a Disability Justice lens, detailed in the Introduction. Therefore, instead of restoring 'normality,' efforts should shift towards celebrating "all the different ways we can be in the world" (Stephanie). Surpassing mere symptom reduction views of clinical recovery, the focus should be directed at meeting personal recovery goals, which may include increasing societal and environmental inclusion, enhancing the quality and agency of one's life and empowerment (Slade, 2009; Tew et al., 2012).

These aims align with the FB program described in this study, promoting holistic well-being without pressuring individuals to change. Instead, it teaches acceptance without judgment, provides safety, empowers self-agency and self-care, and fosters community and environmental inclusion. All these benefits can be effectively applied in psychotherapeutic contexts. Therefore, it is recommended that clinical psychologists integrate alternative approaches, such as accessible FB or nature-based therapy, into their practice, particularly when working with PWDs (e.g., Roland, 2020). The American Psychological Association (APA, 2023) endorses FB as an effective intervention for supporting individual well-being, and it is suggested that the British Psychological Society follow suit.

Offering alternative therapeutic approaches is crucial for those who often have adverse, dehumanising experiences with institutional services, which is common among marginalised communities such as PWDs, as detailed in theme one. This approach would also enhance engagement with individuals who struggle with traditional room-based talking therapies due to sensory difficulties, neurodiversity or people with learning disabilities (Floresca, 2020). This supports Deegan's (2005) notion of personal medicine – promoting access to meaningful activities to increase well-being rather than, medical interventions (e.g., pharmaceuticals).

While the UK charity MIND (2021) does not explicitly reference FB, it elaborates on nature's benefits and various ecotherapy programs, such as adventure therapy. However, the organisations recommended to access such nature-based interventions often involve high costs and inadequate consideration of the physical or practical access needs of PWDs and other marginalised communities. This is true for many private organisations and practitioners offering FB in the UK.

Thus, it is not enough for FB guides to offer FB sessions or for clinical psychologists to integrate these practices into their work. These sessions must be accessible, inclusive, cost-effective, and safe, as demonstrated by EcoWisdom. This involves educating people about the benefits of nature and dispelling common misconceptions to enhance motivation. It also requires providing various ways to engage with nature, such as online or indoor options, individual or group settings,

and teaching people how to connect with nature using mindfulness principles and the power of visualisation. Additionally, flexible adaptations must be offered to meet individual needs during sessions. These approaches align with the National Institute for Health and Care Excellence guidelines for working with PWDs (NICE, 2022).

Since ANWPs were designed by PWDs using a collaborative peer-leadership approach, fostering a sense of community, therapists should step away from the 'expert' position and engage in liberation psychology practice, "standing alongside people, working with them, seeking to develop collaborative relations that recognize power inequities" (Comas-Díaz et al., 1998, p. 779). This is in accordance with trauma-informed care principles, which advocate moving away from helper-helped roles and working in partnership with service users (Sweeney & Taggart, 2018).

Although some may prefer individual practices, social connectedness and peer support were key elements of FB for most participants, who often face social exclusion. This underscores the importance of community integration in clinical practice, offering group sessions and connecting individuals with local groups and organisations amongst like-minded people with similar experiences. This aligns with the WHO's (2016) advice that community participation and empowerment are central to health promotion.

### ***Policy Invitations***

Human health cannot be viewed in isolation as it depends highly on the quality of our environment (Alves & Rosa, 2007). Thus, this study provides valuable insights for policymakers on utilising nature to enhance public health, environmental consciousness, and community building among citizens.

The findings from the SLR, supported by this study, demonstrate that learning about nature increases motivation to engage in nature-connection and preservation activities (Poulsen et al., 2016). Furthermore, research suggests that outdoor learning can amplify these benefits (Otto &

Pensini, 2017). Fiennes et al. (2015) add that such education promotes a sense of belonging and community involvement in children. Additionally, the environmentally conscious backgrounds of many study participants underscore the lasting impact of early nature exposure and education. This highlights the critical importance of integrating nature-based environmental education into school curricula to foster lifelong environmental stewardship, nature relations, better health development, and stronger community bonds.

This study advocates for accessible nature education and interventions to be available across the lifespan, particularly within public health sectors, focusing on the most vulnerable populations who may benefit most. One practical approach to achieve this is green social prescribing, described in the Introduction. FB has been a green social prescription in Japan since 1982 and became available in Surrey, UK, following research by McEwan et al. (2021), endorsed by NASP. Therefore, this study recommends the inclusion of FB and other nature-based interventions as part of green social prescribing in the UK. FB should also be a regulated practice to ensure adherence to FB principles, public safety, ethical standards and credibility (Brook, 2021). This would support public knowledge of FB, addressing its common misconceptions. Given that healthcare professional engagement is inconsistent, with 96% reporting they signpost patients to community services rather than referring them directly to social prescribing (Moore et al., 2022), there is also a need to increase GP training on engaging with social prescribing effectively (Aughterson, 2022).

Considering that PWDs are at a higher risk of encountering social and environmental barriers and exclusion (Macdonald et al., 2018; Oliver & Barnes, 2013), as echoed by participants in this study, governmental policymakers and program developers must prioritise accessibility and inclusivity for PWDs in nature environments and nature-based programs. This might include offering accessible transport services to and within nature reserves, providing adaptive equipment (e.g., all-terrain wheelchairs), developing more accessible trails (e.g., non-slippery surfaces), and designing multi-sensory experiences (e.g., audio description units and tactile exhibits). To effectively address

health inequalities, it is essential to involve EbE in decision-making processes (e.g., to co-design and co-facilitate the programs).

To support accessibility further, the planning and health sectors must collaborate in designing urban landscapes to accommodate health needs and create green spaces that foster social connections (Sachs et al., 2024). This is especially required in low-income neighbourhoods wherein PWDs often reside, as these tend to have fewer nature sites (Williams et al., 2020). Studies highlight trees, soil, and moving water as the most relaxing and revitalising components, suggesting that such elements can support an inexpensive yet powerful public health intervention, addressing enduring health inequalities (Kuo, 2015).

### ***Future Research Invitations***

Future research should build on these findings to enhance the understanding and application of FB interventions to improve the well-being of PWDs and other marginalised groups.

The current study outlined experiences of FB; however, the mechanisms driving these experiences remain unclear. Investigating mechanisms of change in connectedness through FB is crucial for refining and enhancing the intervention's effectiveness. For instance, randomised controlled trials might examine the effectiveness of FB against mere exposure to nature, helping to isolate specific components that drive change. Additionally, participants talked about their differing experiences of various types of FB sessions. Thus, comparative studies between accessible online and in-person programmes, as well as solitary versus group sessions among PWDs, are needed to determine the most effective therapeutic approaches. These investigations will provide valuable insights into tailoring interventions to maximise benefits for PWDs and for the most effective methods to integrate this practice into healthcare settings.

Moreover, the findings of this study revealed that an accessible and adaptive approach to FB is crucial for PWDs. To further individualise this intervention, it is necessary to determine if the

benefits extend to other marginalised groups, such as individuals with learning disabilities and older adults. Given the critical role that peer support appears to play within FB groups, it is also imperative to evaluate the efficacy of mixed groups comprising individuals from diverse identities and backgrounds (e.g., including both PWDs and those without). This assessment would provide valuable insights into the potential benefits and challenges of heterogeneous group compositions in fostering inclusive support networks. Additionally, since this research focused on the Canadian population and prior studies suggest cultural frameworks shape understanding of the natural world and humanity's place within it (Astuti et al., 2004), future research should include diverse cultural contexts, including those outside Western cultures, to avoid oversimplification of the understanding of human-nature relationships. Furthermore, given the predominance of female participants in the study, it is important to investigate the experiences of males to ensure a more comprehensive understanding of gender dynamics in this context. It is also essential to investigate how individuals without prior experiences in nature or mindfulness interventions respond to and benefit from FB, given that most participants in the current study had such experiences.

This study benefited from the involvement of EbE, who ensured that the research process and language were relevant and responsive to the needs of PWDs, thereby enhancing trust and engagement. Including these experts is practical and ethical, as it values lived experiences, promotes inclusivity, and empowers participants (Videmšek & Fox, 2018). Researchers should continue to incorporate EbE to co-construct studies and tailor them to the specific needs of target populations. Studies should also use more inclusive and diverse terminology of disability to reflect their participants' experiences better.

Similarly, engaging participants in member reflections and sharing the study's findings with them seemed to boost their motivation to continue their FB practice. Thus, future studies should engage in this process, too, to foster a commitment to practice amongst participants. Given that only half of the participants engaged in this, more public engagement and patient involvement methods,

such as focus groups, could capture a broader range of experiences and insights (Holmes et al., 2019).

### **Critical Evaluation of the Study**

The traditional criteria used to assess the quality of quantitative research—reliability, validity, and replicability—are less suitable for qualitative research as they originate from a positivist framework (Smith, 2003). However, it remains crucial to evaluate the robustness and integrity of any research, including qualitative investigations (Hammarberg et al., 2016). The quality assessment was an ongoing process and I utilised the CASP (2018) checklist used in the SLR to evaluate the quality of the research, including its strengths and limitations, as demonstrated in Table 10.

### **Conclusion**

This is the first qualitative research to deeply explore change in the sense of connectedness through FB as experienced by PWDs. The findings show that accessible FB programs enhance connectedness to oneself, others, and nature, leading to recognition of the interconnectedness of all beings and a sense of spirituality. It demonstrates connectedness's key role in cultivating a sense of belonging, reduced isolation, self-identity, personal growth, community building, and environmental stewardship. The study highlights FB as an effective intervention for enhancing psycho-eco-social well-being. It also outlines various accessible options, including digital and indoor adaptations, peer support, and collaborative approaches to help overcome possible barriers to practising FB for PWDs. The findings advocate for the broader inclusion of FB as an accessible, inexpensive, beneficial intervention in therapeutic practices, public health initiatives, and educational curricula to promote a healthier, more inclusive, and environmentally conscious society.



**Table 10***Quality Appraisal of the Current Research*

Quality Criteria	Yes = criteria met No = criteria not met Can't tell	Evidence for Meeting the Quality Criteria
1. Was there a clear statement of the aims of the research?	Yes	<p>Strengths:</p> <p>The relevance and importance of this research were outlined in the Introduction and further highlighted by the gap in the literature highlighted by the systematic literature review in Chapter Two. The research aims and questions were clearly stated in Chapter Two.</p>
2. Is a qualitative methodology appropriate?	Yes	<p>Strengths:</p> <p>Methods Chapter Three describes the qualitative methodology and provides a rationale for its suitability in meeting the research aims and answering its questions.</p>
3. Was the research design appropriate to the aims of the research?	Yes	<p>Strengths:</p> <p>Methods Chapter Three discusses the suitability of the qualitative approach, semi-structured interviews, and RTA for meeting the research aims and answering its questions. It outlines how each approach aligns with the researcher's epistemological stance and considers the suitability of other approaches, including IPA and NA.</p>
4. Was the recruitment strategy appropriate to the aims of the research?	Yes	<p>Strengths:</p> <p>The introduction outlined the importance and rationale for exploring the experiences of people with disabilities. Participant inclusion criteria and their rationale were outlined in the Methods Chapter Three. The chosen sampling strategies and recruitment methods were also provided in the Methods Chapter Three.</p> <p>Limitations:</p> <p>As raised in the member reflections, the term 'physical health difficulties' used in the study's recruitment and interview materials may imply a medical model perspective, which can be limiting for some participants; thus, future research should use more inclusive language that respects varied experiences.</p>

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5. Was the data collected in a way that addressed the research issue?	Yes	<p>Strengths:</p> <p>Methods Chapter Three outlines the rationale for the virtual individual semi-structured interviews as a suitable data collection method to address the research question. The chapter also details the development of an interview schedule, the interview procedure, and data storage. The full interview schedule is included in Appendix F. Instead of using saturation, considerations of information power to determine the sample size were used, as outlined in the same chapter. The rationale for this is provided.</p> <p>Limitations:</p> <p>As detailed in Methods Chapter Three, one potential participant was unable to engage in the online interview due to a lack of access to the necessary technology, which was part of the inclusion criteria. Although online interviews were the only feasible option since the study was conducted in a different country to the participants, this highlights the digital divide that affects marginalised groups based on age, disability, and socioeconomic status, potentially leading to selection biases and underrepresentation in research (Brown, 2022). Non-verbal signs were also less visible online, making it more challenging to ensure that I was fully attending to participant's needs and emotional responses (Tremblay et al., 2021). To compensate for this, regular check-ins were used.</p>
6. Has the relationship between the researcher and participants been adequately considered?	Yes	<p>Strengths:</p> <p>The researcher's positionality and epistemological stances were shared in the Introduction. The value of subjectivity and reflexivity in considering how the researcher influences the research was discussed throughout the study. Reflexivity practice methods were outlined in the Methods Chapter Three.</p> <p>Limitations:</p> <p>As an outsider-researcher, my lack of personal experience may have made it more challenging for some participants to share profound or challenging experiences with me. However, this was not explicitly expressed or observed. To address this possibility, I engaged in ongoing collaboration with experts by experience and supervisors to critically reflect on my approach to the research process (Dwyer &amp; Buckle, 2009).</p>

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7. Have ethical issues been taken into consideration?	Yes	<p>Strengths:</p> <p>Ethical considerations were continuously examined and addressed, as discussed in the Ethical Considerations section in Methods Chapter Three. The Ethics Committee approval included a comprehensive risk assessment evaluating the risk to participants. Changes to the ethical approach were implemented to accommodate changes in the project (Appendices R, S, T).</p>
8. Was the data analysis sufficiently rigorous?	Yes	<p>Strengths:</p> <p>The analysis process was clearly outlined in the data analysis section in Methods Chapter Three, including a summary of the six phases of RTA in Table 7. The NVivo coding extracts are provided in Appendix M. The development of themes is demonstrated in Appendix N. As discussed in point six, I considered my subjective influences during data analysis. Member reflections allowed the opportunity for further reflexive elaborations of the analysis (Tracy, 2010).</p> <p>Limitations:</p> <p>Only half of the participants engaged in member reflections, highlighting a need for more interactive methods, such as focus groups, in the future. Additionally, the limited time available to incorporate member reflections into the analysis constrained the study's ability to integrate participant feedback fully, emphasising that more time needs to be allocated for such activities in the future.</p>
9. Is there a clear statement of findings?	Yes	<p>Strengths:</p> <p>A final list of themes and sub-themes addressing the research question is outlined in a visual map in Figure 3 and a graphic map in Figure 4. The Findings in Chapter Four provide a detailed description of each theme and sub-theme, including illustrative and analytic quotations. Research findings include considerations of contradictory data. A summary of findings is presented in Discussion Chapter Five.</p> <p>Limitations:</p> <p>The study's participants were primarily white Canadian females, and the findings are specific to the EcoWisdom organisation's setting. However, as with any qualitative research, these results are not meant to be broadly generalised. Readers should consider the findings in their context and determine the applicability of the activities accordingly.</p>

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10. How valuable is the research?

N/A

Strengths:

The study provides valuable contributions to the research base and offers helpful insights for clinical practice, society, policy-making, and future research. The implications and recommendations of the study are detailed in Discussion Chapter Five.

This study is also hoped to help guide the practice of forest bathing guides. In collaboration with one of the consultants, the findings will be presented to forest bathing guides within EcoWisdom on July 6, 2024.

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**Appendices**

**Appendix A: Library Search Planning Form**

**Search Planning Form**

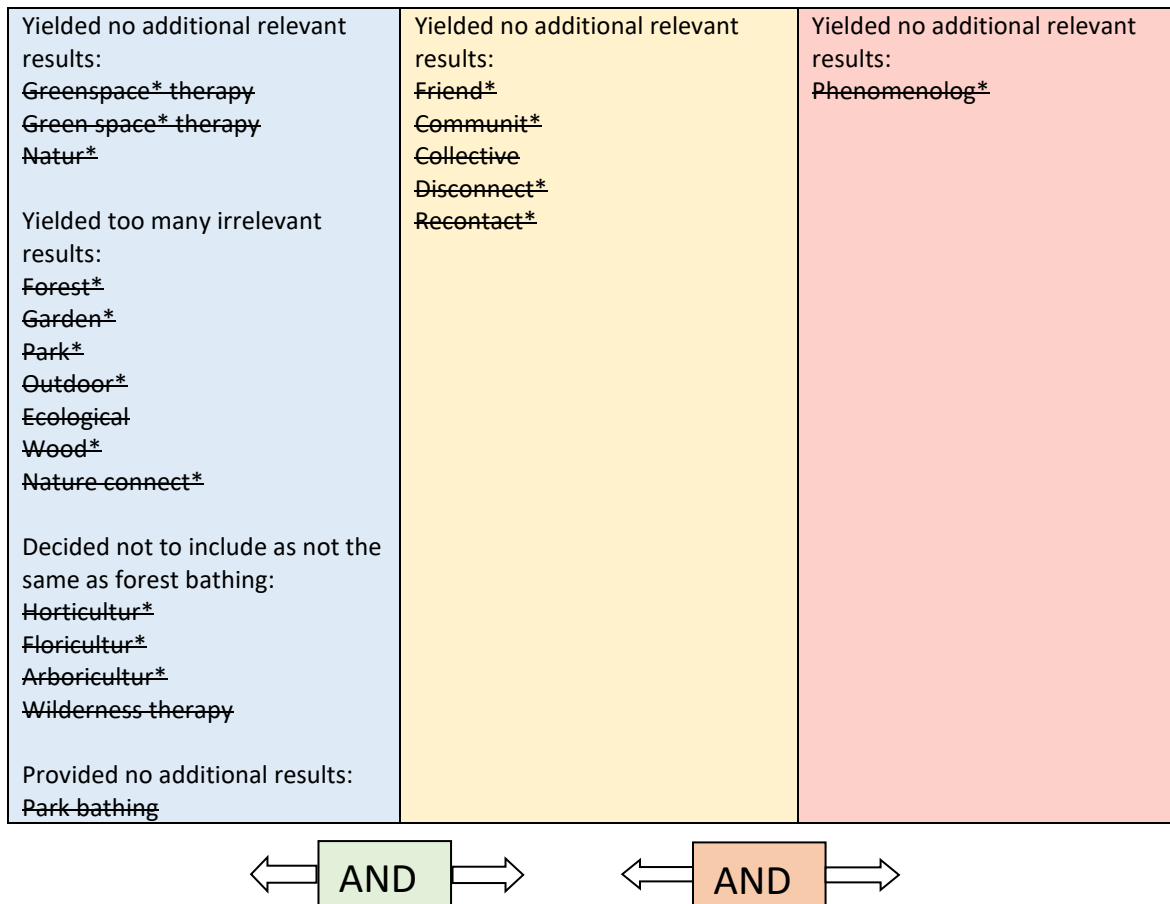
**Question:** What does the qualitative literature tell us about people’s experience of connectedness through forest bathing?

**Identify the main concepts of the question (use as many as you need)**

<b>Concept 1</b> Forest bathing OR	<b>Concept 2</b> Connect* OR	<b>Concept 3</b> Qualitative OR
--	------------------------------------	---------------------------------------

**List alternative keywords, terms and phrases below:**

Concept 1	Concept 2	Concept 3
Forest therapy OR	Reconnect* OR	Interview* OR
Shinrin yoku OR	Interconnect* OR	Focus group* OR
Nature therapy OR	Relat* OR	Narrative* OR
Nature prescri* OR	Interrelat* OR	Grounded theory OR
Green prescri* OR	Social* OR	Case study OR
Outdoor therapy OR	Bond* OR	Observation* OR
Ecotherap* OR	Lonel* OR	Survey* OR
Park therapy OR	Isolat* OR	
Nature immersion OR	Contact* OR	
Nature-based therapy OR	Recontact* OR	
Nature-based intervention* OR	Belong* OR	
Nature intervention* OR	Interact* OR	
Greenspace intervention* OR	Network* OR	
Green space intervention* OR	Integrat* OR	
	Reintegrat* OR	



**Step 1: Use OR to combine ALTERNATIVE search terms together.**

**Step 2: Use AND to combine different concepts together.**

**A full electronic search strategy used in all databases:**

("forest bathing" OR "forest therapy" OR "Shinrin yoku" OR "nature therapy" OR "nature prescri\*" OR "green prescri\*" OR "outdoor therapy" OR "park therapy" OR "nature immersion\*" OR "nature-based therapy" OR "nature-based intervention\*" OR "nature intervention\*" OR "greenspace intervention\*" OR "green space intervention\*") AND (connect\* OR reconnect\* OR interconnect\* OR relat\* OR interrelate\* OR social\* OR bond\* OR lonel\* OR isolat\* OR contact\* OR belong\* OR interact\* OR network\* OR integrat\* OR reintegrat\*) AND (qualitative OR interview\* OR "focus group\*" OR narrative\* OR "grounded theory" OR "case study" OR observation\* OR survey\*)

## Appendix B: Descriptive and Analytic Theme Generation Process

**SLR Question:** What does the qualitative literature tell us about people's experience of connectedness through forest bathing?

### Codes:

1. 'This feels like home' - feeling safe and protected in nature
2. Accepting others without trying to fix them
3. Being drawn to the authenticity and imperfections of nature
4. Being given choice and permission to modify forest bathing activities according to ones needs fosters a sense of self-agency
5. Belonging to a safe and trustworthy community allows us to bring authentic selves and open up to the authenticity of others
6. Connectedness improves health and well-being
7. Connection with facilitators increase self-reflection and confidence
8. Developing meaningful relations with natural objects or locations
9. Encouraging others to self-care just as we do for ourselves
10. Feeling care and compassion from the forest bathing facilitators supports feeling safe and held
11. Feeling gratitude and grief from memories of nature connection before disabilities and appreciation of current possibilities
12. Feeling joy engaging in nature activities
13. Feeling more grounded in nature
14. Feeling more present in nature
15. Feeling safe in nature promotes openness to self and others
16. Feeling the awe of nature
17. Feeling the interconnectedness of all beings
18. Feeling validated and accepted by the group members without them trying to fix you
19. Forest bathing activities are relaxing
20. Forest bathing community creates a sense of belonging
21. Forest bathing facilitates community building
22. Forest bathing facilitates radical acceptance
23. Forest bathing helps to recover self-identity
24. Forest bathing programs provide people with the necessary coping skills to self-care
25. Forest bathing programs provide space for self in stressful life context outside the programs
26. Gaining clarity of ones preferences and values
27. Giving back to nature enhances the feeling of interconnectedness
28. If others can do it, I can too - stepping out of the comfort zone and confidence building through co-regulating
29. Importance of improving accessibility and making individual adaptations in forest bathing programs
30. Importance of supporting participants in maintaining relationships after the program
31. Improved mood
32. Improved well-being
33. Increased ability to practice mindful awareness of ones bodily sensations which can be challenging for people with disabilities
34. Increased ability to reflect
35. Increased appreciation and gratitude of nature
36. Increased awareness of ones natural surroundings
37. Increased awareness of the benefits of nature
38. Increased awareness of the importance and motivation for practice of self-care
39. Increased compassion for self and others
40. Increased connection to nature
41. Increased connection to others
42. Increased connection to self
43. Increased connection to the forest bathing facilitators
44. Increased self-worth encourages self-care
45. Involving senses and movement helps to stay more present
46. Isolation leads to reduced self-care
47. It is easier to connect to others in nature
48. Learning about nature increases self-confidence
49. Learning about nature facilitates nature connection
50. Learning coping skills increase self-confidence
51. Mindful nature connection facilitates deep noticing of small details of the natural world
52. Mindful nature connection reduces worry and rumination
53. Mindful presence in nature awakens senses
54. Mirroring - relating oneself to nature generates self-compassion
55. Nature accepts you just as you are
56. Nature and group connections increase confidence and self-esteem
57. Nature facilitates sensory exercises which enhances the ability to stay present that may be difficult outside of the natural environments
58. Nature heals physical body
59. Nature increases connection to spirituality

60. Nature increases motivation to learn and activities
61. Nature is calming and relaxing
62. Nature provides space for reflection
63. Nature reduces anxiety
64. Opening up to self and others allows one to discover authentic self
65. Others noticing positive change in us
66. Peer support - members of the forest bathing group caring for each other
67. Poor physical health acts as motivation to spend time in nature
68. Practising mindfulness in nature helps to connect to the present moment
69. Preference of engaging in forest bathing as a group rather than alone
70. Present focus is required to truly notice the beauty of nature
71. Working within one's abilities
72. Reconnecting to ones senses facilitates emotional expression
73. Reconnecting to the inner child and remembering the childhood nature connection experiences
74. Reduced isolation and loneliness
75. Relaxation facilitates pain release
76. Seeing nature as living being
77. Seeing oneself as part of the interconnected world combats loneliness
78. Sharing similar experiences with people in forest bathing groups facilitates connections
79. Technology is a barrier to building connection to nature and others
80. Trusting the natural changes and impermanence of nature
81. Using nature for self-care
82. Virtual forest bathing allows people with physical health difficulties to access nature
83. Visualisation and use of mirror neurons allow people with disabilities sensory connection to nature
84. Wanting to see other people connect to nature just as we do
85. Wanting to spend more time in nature

**Descriptive Themes:**

(Including a list of the included codes)

**1. Sense of Safety and Protection**

- 1: 'This feels like home' - feeling safe and protected in nature
- 10: Feeling care and compassion from the forest bathing facilitators supports feeling safe and held
- 15: Feeling safe in nature promotes openness to self and others

**2. Community and Belonging**

- 20: Forest bathing community creates a sense of belonging
- 21: Forest bathing facilitates community building
- 30: Importance of supporting participants in maintaining relationships after the program
- 41: Increased connection to others
- 47: It is easier to connect to others in nature
- 69: Preference of engaging in forest bathing as a group rather than alone
- 74: Reduced isolation and loneliness

**3. Facilitator and Peer Support**

- 43: Increased connection to the forest bathing facilitators
- 65: Others noticing positive change in us
- 66: Peer support - members of the forest bathing group caring for each other
- 78: Sharing similar experiences with people in forest bathing groups facilitates connections

**4. Health Benefits and Well-being**

- 6: Connectedness improves health and well-being
- 19: Forest bathing activities are relaxing
- 31: Improved mood
- 32: Improved well-being
- 58: Nature heals physical body
- 61: Nature is calming and relaxing
- 63: Nature reduces anxiety
- 67: Poor physical health acts as motivation to spend time in nature
- 75: Relaxation facilitates pain release

**5. Mindfulness and Presence**

- 13: Feeling more grounded in nature
- 14: Feeling more present in nature
- 33: Increased ability to practice mindful awareness of one's bodily sensations which can be challenging for people with disabilities
- 45: Involving senses and movement helps to stay more present
- 51: Mindful nature connection facilitates deep noticing of small details of the natural world
- 52: Mindful nature connection reduces worry and rumination
- 53: Mindful presence in nature awakens senses
- 57: Nature facilitates sensory exercises which enhances the ability to stay present that may be difficult outside of the natural environments
- 68: Practising mindfulness in nature helps to connect to the present moment
- 70: Present focus is required to truly notice the beauty of nature
- 72: Reconnecting to ones senses facilitates emotional expression

**6. Enriched Nature Connection**

- 8: Developing meaningful relations with natural objects or locations
- 12: Feeling joy engaging in nature activities
- 16: Feeling the awe of nature
- 35: Increased appreciation and gratitude of nature
- 36: Increased awareness of one's natural surroundings
- 37: Increased awareness of the benefits of nature
- 40: Increased connection to nature
- 49: Learning about nature facilitates nature connection
- 84: Wanting to see other people connect to nature just as we do
- 85: Wanting to spend more time in nature

**7. Interconnectedness With All Beings**

- 17: Feeling the interconnectedness of all beings
- 27: Giving back to nature enhances the feeling of interconnectedness
- 76: Seeing nature as a living being
- 77: Seeing oneself as part of the interconnected world combats loneliness

**8. Connection to Spirituality**

- 59: Nature increases connection to spirituality

**9. Cultivating Self-Care**

- 24: Forest bathing programs provide people with the necessary coping skills to self-care
- 25: Forest bathing programs provide space for self in stressful life context outside the programs
- 38: Increased awareness of the importance and motivation for practice of self-care
- 44: Increased self-worth encourages self-care
- 46: Isolation leads to reduced self-care
- 71: Working within one's abilities
- 81: Using nature for self-care

**10. Nurturing Interpersonal Compassion**

- 9: Encouraging others to self-care just as we do for ourselves
- 39: Increased compassion for self and others
- 54: Mirroring - relating oneself to nature generates self-compassion

**11. Self-Discovery**

- 23: Forest bathing helps to recover self-identity
- 26: Gaining clarity of one's preferences and values
- 34: Increased ability to reflect
- 42: Increased connection to self
- 62: Nature provides space for reflection
- 64: Opening up to self and others allows one to discover authentic self
- 73: Reconnecting to the inner child and remembering the childhood nature connection experiences

**12. Personal Growth and Confidence Building**

- 7: Connection with facilitators increase self-reflection and confidence
- 28: If others can do it, I can too - stepping out of the comfort zone and confidence building through co-regulating
- 48: Learning about nature increases self-confidence
- 50: Learning coping skills increase self-confidence
- 56: Nature and group connections increase confidence and self-esteem
- 60: Nature increases motivation to learning and activities

**13. Acceptance and Authenticity**

- 2: Accepting others without trying to fix them
- 3: Being drawn to the authenticity and imperfections of nature
  - 5: Belonging to a safe and trustworthy community allows us to bring authentic selves and open up to the authenticity of others
  - 18: Feeling validated and accepted by the group members without them trying to fix you
  - 22: Forest bathing facilitates radical acceptance
  - 55: Nature accepts you just as you are
  - 80: Trusting the natural changes and impermanence of nature

**14. Accessibility and Adaptations**

- 4: Being given choice and permission to modify forest bathing activities according to one's needs fosters a sense of self-agency
- 11: Feeling gratitude and grief from memories of nature connection before disabilities and appreciation of current possibilities
- 29: Importance of improving accessibility and making individual adaptations in forest bathing programs
- 79: Technology is a barrier to building connection to nature and others
- 82: Virtual forest bathing allows people with physical health difficulties to access nature
- 83: Visualisation and use of mirror neurons allow people with disabilities sensory connection to nature

**Analytic Themes:**

- 1. Connectedness Cultivates Well-being and Self-Care**
- 2. Building a Nurturing Community in Nature's Embrace**
- 3. Deepening Natural Interconnections and Spiritual Awareness**
- 4. Personal Discovery and Growth**
- 5. Enhancing Safety, Accessibility, and Inclusivity**



## Appendix C: Consultation Agreement



### MRP CONSULTATION CONTRACT

This agreement is intended to support conversations between the lead researcher with the supervisory team, and consultants to ensure clarity from the outset for this project.

#### **(Working) Title of the research project:**

A qualitative study looking at how forest therapy affects people's sense of connectedness to self, others, and nature.

#### **Research Team**

Main Researcher: Karolina Balciunaite

Consultants (consent to named them obtained):

1. Kari Krogh – Co-founder of EcoWisdom Forest Preserve. Kari describes herself as:  
*I continue to live with a complex chronic illness, and I find great relief and comfort in nature and, in particular, the EcoWisdom forest preserve, but also from the community and connection to other people who understand and accept my body the way it is. I really enjoy community building, and it's helpful. I have a PhD in Psychology and have worked as a professor in Disability Studies with an interest in collaborative and community-based research methods. I have also received training in Mindfulness Meditation. I have used my expertise when designing ANWP programs and advising this research.*
  
2. Karen Van Biesen ('Punki') – EcoWisdom Access Consultant & Certified Nature and FB Guide. Punki describes herself as:  
*I like being a teacher and a student. I studied disability studies, sociology, and anthropology and have an interest in psychology, and I referenced those things in some of our discussions. I am a caring person and like to help those around me. I have Cerebral Palsy. I am here.*

Supervisory Team: Dr Kirsten McEwan and Dr Stephen Pack

#### **Agreement**

As the main researcher on this project, I agree to:

- Take the lead on organising any meetings with supervisors & consultants
- Send drafts to consultants for feedback with clear notice of deadlines
- Offer continuous feedback about how involvement from consultants has added value to the research and, conversely, when suggestions have not been able to be accommodated
- Provide feedback on research findings
- Provide final electronic copies of the research to all consultants
- Acknowledge consultants in thesis write-up, or if consultants included in the write-up of the publication – include as co-authors
- Offer opportunities to collaborate on presentations, posters, publications, and any other dissemination
- Consider and support consultants' well-being throughout this collaborative process.
- Offer flexibility and accommodation to disabilities of consultants (e.g., pace-related flexibility; offer opportunities to give verbal feedback instead of text)
- Ensure that there is compensation for consultants for their time

As a consultant for this project, I understand that:

- Involvement as a consultant is purely voluntary; I can notify the main researcher at any time should my commitments change
- I may dip in and out at different stages of research depending on my interest, availability, ability, and area of expertise
- The main researcher may not always be able to accommodate all feedback and may need to make research decisions which do not always follow my suggestions (e.g., when feedback clashes occur)
- The main researcher may have her own limitations on availability and energy due to personal reasons or due to the intensity of the course.

And agree to:

- Provide feedback on aspects of the research that I feel able to provide, including question, design, recruitment, data collection, write-up, publication, dissemination, and ethics
- Express interest should I wish to collaborate on analysis or presentations, with the understanding that this may not always be possible
- Offer guidance and expertise on any ethical concerns or considerations at the earliest convenience
- Maintain the anonymity of participants and abide by the ethical principles as outlined in the information sheet given to participants
- Prioritise my well-being over and above collaboration in this project.

Both the main researcher and consultants agree to:

- Follow the collaboratively established conflict resolution process outlined below in the events where values/core beliefs do not align:

*Attend a meeting to present our perspectives with the others listening without interruption. If we wish, we could invite one mediator/friend/support person to support us in having this conversation with the honest intention of finding a suitable resolution for everyone. During this meeting, we agreed to use mindful/contemplative communication characterised by being grounded, compassionate, thoughtful, and kind towards one another.*

- Agree to adopt a social model of disability.
- Acknowledge that there are power differentials and try to highlight the perspectives of people with disabilities in the context of this
- Try to bring a sense of equity and try to move towards it
- This is a living document that can be modified according to our needs.

### Signatures

Signature of the main researcher: Karolina Balciunaite [Signature anonymised]

Date: 16/11/2022

Signature of Consultant: Kari Krogh [Signature anonymised]

Date: 13/12/2022

Signature of Consultant: Karen Van Biesen (Punki) [Signature anonymised]

Date: 19/11/2022

**Appendix D: Participant Photograph Consent Form****Photograph Consent Form****Research title**

Experiences of change in connectedness through forest bathing amongst adults with physical health difficulties.

**Purpose of the consent form**

This form seeks your permission to use photographs taken of you during the Accessible Nature Wellbeing Program (ANWP) sessions with EcoWisdom in Karolina Balciunaite's doctoral thesis and in any future publications or disseminations related to this study. This may include but is not limited to academic journals, conference presentations, or other forms of public dissemination. These photographs will be used to illustrate, support, or enhance the research findings in the thesis.

**Voluntary consent**

Your consent is entirely voluntary. You can choose not to permit the use of your photographs without any penalty or loss of benefits to which you are otherwise entitled. Your relationships with EcoWisdom or the University of Hertfordshire will not be affected.

**Confidentiality considerations**

Your privacy and confidentiality are paramount in this study. If you were a participant in this study interview, the photographs will be used solely for the purposes stated in this form and will not be used in a manner that allows them to be linked back to your interview content. This means that your responses in the interview will remain completely anonymous, and there will be no way to connect your answers to the photographs. Additionally, your consent form, which includes your name and contact details, will be stored separately from both the photographs and interview data to ensure there is no linkage.

All this information will be stored confidentially on a secure University of Hertfordshire's OneDrive system in password-protected documents and will be kept until I complete my doctorate in clinical psychology degree in accordance with the University of Hertfordshire Ethics and Research Integrity guidelines. Your consent form and contact details will be destroyed after this point.

**Ethical review of the study**

This study has been reviewed by the University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority.

The UH protocol number is aLMS/PGT/UH/05351(2).

The University's regulation, UPR RE01, 'Studies Involving the Use of Human Participants' can be accessed via this link: <https://www.herts.ac.uk/about-us/governance/university-policies-and-regulations-uprs/uprs> (after accessing this website, scroll down to Letter S where you will find the regulation).

**Age Verification**

I confirm that I am over 18 years old.

**Consent to Use Photographs**

Please indicate your consent by ticking the appropriate box and signing below:

I consent to the use of photographs taken of me during the ANWP sessions in the doctoral thesis and in future publications or presentations as described above.

I do not consent to the use of photographs taken of me.

**Your Name:**

**Signature:**

**Date:**

**Principal investigator:**

**Signature of principal investigator:**

**Date:**

**Appendix E: Photographer Photograph Consent Form****Photographs Consent Form****Research title**

Experiences of change in connectedness through forest bathing amongst adults with physical health difficulties.

**Aim of the study**

This study aims to explore how people's experience of forest bathing (otherwise known as mindful nature connection) changed how they feel they connect to themselves, others, and nature. Specifically, it is looking to interview people with physical health difficulties who have attended at least two Accessible Nature Wellbeing Programs (ANWPs) offered by EcoWisdom.

**Research team**

Principal researcher: Karolina Balciunaite (Trainee Clinical Psychologist), University of Hertfordshire. Karolina is working with two supervisors, Dr Stephen Pack (Sport and Exercise Psychologist) and Dr Kirsten McEwan (Associate Professor of Health and Well-being), and two experts by experience from EcoWisdom organisation who meet this study's eligibility criteria and are consulting on this project to make sure this project is delivered with care and the needs of its participants are considered throughout - Karen Van Biesen (EcoWisdom Access Consultant & Certified Nature and Forest Bathing Guide) and Kari Krogh (Co-founder of EcoWisdom Forest Preserve).

**Purpose of the consent form**

This form seeks your voluntary permission to use photographs taken by you during the ANWP sessions with EcoWisdom in Karolina Balciunaite's doctoral thesis and in any future publications or disseminations related to this study. This may include but is not limited to academic journals, conference presentations, or other forms of public dissemination. These photographs will be used to illustrate, support, or enhance the research findings in the thesis.

**Credits**

All photographs used will be credited to you, the photographer, directly under the images in any written and/or presented work of this study, unless you request to remain anonymous. The credits will include the following information, which we will ask you to provide for each picture you permit us to use:

- Photographer's full name
- Title of the photo
- Year the photo has been captured
- The location the photo has been captured at

**Confidentiality considerations**

Your consent form, which includes your name and contact details, will be stored confidentially on a secure University of Hertfordshire's OneDrive system in password-protected documents and will be kept until I complete my doctorate in clinical psychology degree in accordance with the University of Hertfordshire Ethics and Research Integrity guidelines. Your consent form and contact details will be destroyed after this point.

**Ethical review of the study**

This study has been reviewed by the University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority.

The UH protocol number is aLMS/PGT/UH/05351(2).

The University's regulation, UPR RE01, 'Studies Involving the Use of Human Participants' can be accessed via this link: <https://www.herts.ac.uk/about-us/governance/university-policies-and-regulations-uprs/uprs> (after accessing this website, scroll down to Letter S where you will find the regulation).

**Age verification**

I confirm that I am over 18 years old.

**Consent to use photographs**

Please indicate your consent by ticking the appropriate box and signing below:

I consent to the use of photographs taken by me during the ANWP sessions in the doctoral thesis and in future publications or presentations as described above.

I do not consent to the use of photographs taken by me.

**Your full name:**

**Your email address:**

**Signature:**

**Date:**

**Principal investigator:**

**Principal investigator's email address:**

**Signature of principal investigator:**

**Date:**

## Appendix F: Interview Schedule

### Interview Schedule

- ✓ Introduce myself
- ✓ Ask participants how they heard about this study and why they have decided to take part.
- ✓ Double check if they meet inclusion/exclusion criteria.
- ✓ Double-check if any adaptations are required during this interview.
- ✓ Introduce the research.
- ✓ The interview will take up to 1.5 hours to complete. Introduce the structure of the interview.
- ✓ Confirm that the information sheet has been read and understood/ read through it together if needed.
- ✓ Remind the participant that the interview can be terminated at any point if either the participant or the lead researcher has any concerns.
- ✓ Provide an opportunity to ask questions.
- ✓ Read the consent form and obtain verbal consent – record this on a consent form.
- ✓ Collect demographic information.
- ✓ Begin recording.
- ✓ Begin the interview.

Age	
Self-identified gender	
Ethnicity	
In words that you feel comfortable with, how would you describe the physical health difficulties you may have?	
How many ANWPs sessions have you attended?	
Were these online/in-person/hybrid?	
How many of the ANWPs have you attended within the last 3 months?	
How many of these ANWPs have you attended within the last 1.5 years?	
Are you a trained forest bathing guide?	
Have you completed mindfulness/nature programs outside of accessing the EcoWisdom programs?	
Chosen pseudonym	

#### 1. How has your experience of the nature program changed how you connect to yourself?

- In what way?
- Could you give me an example or a story of this?
- *Do you feel more or less connected to yourself?*
- *Do you feel more or less secure within yourself?*
- *Have you noticed changes in your self-esteem (how you feel about yourself, how you accept yourself)?*
- *Do you see yourself differently or not?*
- In what way was your connection to yourself different before the nature programs?
- How else would you describe how your connection to yourself feels like since nature programs (feelings/emotions/thoughts)?
- What exactly do you think facilitated this change?
- When have you noticed the change happen?
- What impact has this change in how you connect to yourself had on your life? (e.g., social life)
- If not – why do you think that is? What got in the way?

**2. How has your experience of the nature program changed how you connect to others?**

- In what way?
- Could you give me an example or a story of this?
- *Do you feel more or less close to others?*
- *Do you feel more or less isolated/lonely?*
- *Do you feel more or less like you belong?*
- *Do you see others differently or not now?*
- *Do you feel more or less connected to people in the nature programs group?*
- *Does this apply to people outside the nature programs group? If not – how is it different?*
- *Does this apply to strangers? If not – how is it different?*
- In what way was your connection to others different before nature programs?
- How else would you describe how your connection to others feels like since nature programs (feelings/emotions/thoughts)?
- What exactly do you think facilitated this change? Is it the nature programs or the fact that it is done in the group that facilitated this change?
- When have you noticed the change happen?
- What impact has this change in how you connect to others had on your life?
- If not – why do you think that is? What got in the way?

**3. How has your experience of the nature program changed how you connect to nature?**

- In what way?
- *Do you feel closer to nature?*
- *Do you see nature differently?*
- *Do you find your time in nature supportive or not? Would you like to share a story about that?*
- *Do you feel like you want to preserve nature more or not?*
- In what way was your connection to nature different before nature programs?
- How else would you describe how your connection to nature feels since nature programs (feelings/emotions/thoughts)?
- What exactly do you think facilitated this change?
- When have you noticed the change happen?
- What impact has this change in how you connect to nature had on your life?
- If not – why do you think that is? What got in the way?

- ✓ Provide a debrief sheet.
- ✓ Provide the participant with an opportunity to ask any questions.
- ✓ Ask the participant for feedback on how they found the interview process.
- ✓ Offer the participant 25 Canadian Dollars compensation.



## Appendix G: Recruitment Poster

# SEEKING RESEARCH PARTICIPANTS



Are you over 18 and fluent in English?



Have you attended and/or co-facilitated at least 2 Accessible Nature Wellbeing Programs (ANWPs) offered by EcoWisdom? Was at least 1 of them within the last 3 months and the rest within the last 1.5 years?



Do you identify as someone with physical disabilities / chronic illness / physical mobility impairment / limited energy/ severe fatigue / and/or physical challenges associated with ageing?

I hope to explore how your experience of the nature programs has changed how you connect to yourself, others, and nature.

If you would be willing to attend one 60-90 minutes individual interview with me on Zoom or if you wish to find out more, contact me at [k.balclunalte@herts.ac.uk](mailto:k.balclunalte@herts.ac.uk).

You will be offered monetary compensation in acknowledgement of your time, energy, and any additional resources you may require to participate.

Who am I?



My name is Karolina. I am an avid nature lover and a Trainee Clinical Psychologist studying at the University of Hertfordshire in the United Kingdom.

University of Hertfordshire **UH**

This study was approved by the UH Ethics Committee.  
Protocol number: LMS/PGT/UH/05351.

**Appendix H: Recruitment Poster Transcript****Recruitment Poster Transcript**

Seeking research participants.

Are you over 18 and fluent in English?

Have you attended at least 2 Accessible Nature Wellbeing Programs (ANWPs) offered by EcoWisdom? Was at least 1 of them within the last 3 months and the rest within the last 1.5 years?

Do you identify as someone with physical disabilities / chronic illness / physical mobility impairment / limited energy/ severe fatigue / and/or physical challenges associated with ageing?

I hope to explore how your experience of the nature programs has changed how you connect to yourself, others, and nature.

If you would be willing to attend one 60-90 minutes individual interview with me on Zoom or if you wish to find out more, contact me at [k.balciunaite@herts.ac.uk](mailto:k.balciunaite@herts.ac.uk).

You will be offered monetary compensation in acknowledgement of your time, energy, and any additional resources you may require to participate.

Who am I? My name is Karolina. I am an avid nature lover and a Trainee Clinical Psychologist studying at the University of Hertfordshire in the United Kingdom.

This study was approved by the UH Ethics Committee. Protocol number: LMS/PGT/UH/05351.

**University of  
Hertfordshire UH**

## Appendix I: Recruitment Video and Transcript

### Recruitment Video Link

<https://herts-ac-uk.zoom.us/rec/share/RPtDm7upcRTEUz83P9qe5FvfCspC04TjGQtY805XNzdxZhsVKVcmKRaj5pOXmNJ6.uXpC4UtaQ5SevrT>

*This study has been reviewed by the University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority.*

*The UH protocol number is LMS/PGT/UH/05351.*

### Recruitment Video Transcript

Hello,

My name is Karolina, and this video is my invitation to you to take part in my research study.

Before I share some details of this study with you, I want to first tell you a little bit about myself.

I come from Lithuania – a small country covered by forests, lakes, and rivers. Throughout my life, I have come to experience the benefits that nature has to offer to our physical and mental well-being. I wish to help more people access those benefits and do so in a way that respects and preserves the earth we live in.

Although I identify as an able-bodied person, I grew up with my grandad, who has had multiple physical health conditions all his life. I am aware of some of the challenges this can bring, and I wish to find a way to relieve some of them using practices such as forest bathing (what you may otherwise know as mindful nature connection).

I am currently living in London and completing a doctorate in a clinical psychology course at the University of Hertfordshire. As part of my course, I wish to conduct a study exploring how forest bathing changes the sense of connectedness to the self, others, and nature among people with physical health difficulties.

I am looking for people who would be willing to attend an interview with me on Zoom to share their experiences. This would take 60–90 minutes to complete. Your participation would be voluntary, and your contribution would be kept entirely confidential, meaning that all your identifiable details would be removed and remain anonymous.

To be eligible to take part in this study, you are required to:

- Be over 18 years old and be fluent in English.
- To have attended at least 2 Accessible Nature Wellbeing Programme sessions with EcoWisdom (with at least one of them being within the last 3 months and the rest of the sessions being within the last 1.5 years).
- And to identify as someone with at least one of the following: physical disabilities / chronic illness / physical mobility impairment / limited energy/ severe fatigue/ and/or physical challenges associated with ageing.

This study is open to both the clients and guides from the EcoWisdom organisation.

All participants will be offered monetary compensation in acknowledgement of their time, energy, and any additional resources they may require to participate.

If you are interested in participating in this study, please email me (you can see my email here in the corner [k.balciunaite@herts.ac.uk](mailto:k.balciunaite@herts.ac.uk)). You can also find my email in the poster and information sheet sent to you together with this video.

If you are unsure and wish to find out more, you can read the participant information sheet or ask me questions via email.

Thank you for your time in watching this video.

*This study has been reviewed by the University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority.*

*The UH protocol number is LMS/PGT/UH/05351.*

**Appendix J: Participant Information Sheet****Participant Information Sheet****Research title**

A qualitative study assessing how forest bathing changes the sense of connectedness to self, others, and nature among people with physical health difficulties.

**University of Hertfordshire protocol number**

LMS/PGT/UH/05351

**Introduction**

I would like to invite you to take part in a research study. Before you decide, it is important for you to know why the research is being done and what it will involve. Please take your time to read the following information carefully and do not hesitate to ask me any questions if you wish.

**Who am I?**

My name is Karolina Balciunaite. I am a Trainee Clinical Psychologist studying at the University of Hertfordshire in the United Kingdom. I am a psychological therapist by background, and I spent many years working in mental health.

I come from Lithuania – a small country covered by forests where I have immersed myself since childhood. Throughout my life, I have come to experience the benefits that nature has to offer, and now I wish to give something back. I hope that my study will help improve people’s emotional and physical well-being as well as promote the remembrance of why it is so important to respect and preserve the earth we live in.

Although I identify myself as an able-bodied person, I grew up with my grandad, who has had multiple long-term conditions and chronic pain all his life. I am aware of the challenges this brings, and I wish to find a way to relieve some of them.

**Who forms the rest of the research team?**

I am working with two supervisors, Dr Stephen Pack (Sport and Exercise Psychologist) and Dr Kirsten McEwan (Associate Professor of Health and Well-being), and two experts by experience from Eco Wisdom organisation who meet this study’s eligibility criteria and are consulting on this project to make sure this project is delivered with care and the needs of its participants are considered throughout - Karen Van Biesen (Eco Wisdom Access Consultant & Certified Nature and Forest Bathing Guide) and Kari Krogh (Co-founder of Eco Wisdom Forest Preserve).

**What is the purpose of the study?**

This study aims to explore how people’s experience of forest bathing (otherwise known as mindful nature connection) changed how they feel they connect to themselves, others, and nature. Specifically, it is looking to interview people with physical health difficulties who have attended at least two Accessible Nature Wellbeing Programs (ANWPs) offered by EcoWisdom.

**Why is this study important?**

There are growing numbers of research which shows the benefits of forest bathing. It has been shown to improve psychological and physical well-being. However, the knowledge of how forest bathing affects

connectedness is lacking. Moreover, there is a lack of research exploring the experiences of people with physical health difficulties. This study aims to contribute to this lack of knowledge and provide a voice for this population group that might otherwise be left unheard.

### **Do I have to take part?**

It is entirely up to you whether you decide to participate in this study. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form.

Agreeing to join the study does not mean you have to complete the interview. You can withdraw at any stage during the interview without a disadvantage or having to give a reason. Additionally, if you or the interviewer felt at risk of any type of harm, the interview would be terminated.

You can withdraw your data within two weeks of participating in the interview. After this period, the data analysis will begin.

### **Are there any restrictions that may prevent me from participating?**

To be eligible to take part in this study, you are required to:

- Be over 18 years old.
- Be fluent in English.
- Have attended and/or co-facilitated at least 2 online/in-person/hybrid ANWP sessions with the EcoWisdom organisation (with at least 1 of them being within the last 3 months and the within the last 1.5 years).
- Self-identify as someone with physical disabilities / chronic illness / physical mobility impairment / limited energy/ severe fatigue/ and/or physical challenges associated with ageing.
- Have a means of participating in an online interview (e.g., a smartphone, tablet, or computer) where you can access the Zoom online video platform.

There are no other requirements or restrictions that may prevent you from participating.

*Note: This study is open to both the clients and guides from the Eco Wisdom organisation.*

### **If I do decide to take part, what do I have to do?**

If you are interested in participating in this study, you will be asked to contact me via email.

I will then contact you to check whether you meet the criteria for the study and arrange one individual interview at a time convenient for both of us on Zoom. I will ask you if you require any adaptations to be made during the interview to make sure that it is a comfortable experience for you.

At the beginning of the interview, we will go through this information sheet together, and I will answer any questions you may have. Once these have been answered to your satisfaction and if you are still happy for the interview to take place, I will read out the consent form to you and obtain your verbal consent to participate, which will be recorded on your consent form.

During the interview, I will ask you some questions about your experience following the forest bathing sessions provided by EcoWisdom. You will also be asked some questions about your demographic information (e.g., age). This is collected for each participant who decides to participate in the research project. This provides more context for the research regarding who has taken part. This is particularly important when discussing the findings, which may be specific to individuals or more generalisable.

You can decline to answer any questions as you see fit.

**How long will my part in the study take?**

The interview will take approximately 60-90 minutes. The length of this interview will depend on your individual needs and any adaptations you require (e.g., you will be invited to take breaks if needed). I will ask you about any possible adaptations before the interview commences.

**How will my taking part in this study be kept confidential?**

Only me and the research consultants will know who signed up to participate in the study (as the recruitment to the study will be carried out by us). We will have access to your name and email address.

Only I will be conducting the interviews. Before the interview, you will choose a pseudonym. Only you and I will be able to identify you by your chosen pseudonym. In this way, your data will be anonymised, and all other identifying features will be removed when reporting and publishing the results of this study so that no one else but me will be able to identify you. Anonymised quotations may be used to share the findings.

During the interview, I will be in a private space and will not be overheard. I will ask you to do the same. I will record the interview and only keep the audio part of the recording.

I plan to use Zoom to transcribe the interviews (this is when the audio of our conversation is written down in text form). Only I will have access to the audio files. Your name and other demographic details will be removed from the audio recording and transcription text file. The anonymous transcripts will be password-protected and will only be accessible to the research team.

Your consent form, which will include your name, pseudonym, and contact details, will be stored separately from your interview data and will only be accessible to me.

All this information will be stored confidentially on a secure University of Hertfordshire's OneDrive system in password-protected documents and will be kept until I complete my doctorate in clinical psychology degree in accordance with the University of Hertfordshire Ethics and Research Integrity guidelines. Your audio recordings, transcripts, consent form, and contact details will be destroyed after this point.

**What are the possible benefits of taking part?**

Your participation is valuable as it helps build a body of research on forest bathing and its benefits. The more evidence base there is, the more likely it is that different organisations and governmental institutions will take action to facilitate access to green spaces for people who might otherwise struggle for reasons such as impaired mobility or illness. Such evidence also promotes preserving green spaces and combatting climate change.

In addition, it may provide you with an opportunity to reflect on the changes that engaging in a mindful nature connection may have helped you achieve.

**What are the possible disadvantages of taking part?**

Taking part in the interview will require some energy from you, and I appreciate that this may be limited for some. To preserve your physical and mental resources, I will inquire about any adaptations you might require before the interview and will ensure they are in place for you. For example, we could take regular breaks, or you may participate lying down or with your camera switched off if you prefer.

Taking part in this study may also bring up difficult feelings for you. I will try my best to make you as comfortable as possible throughout the study and take all reasonable steps to minimise harm. You should share only as much as you feel comfortable sharing. If you become distressed or feel uncomfortable during or after the study, please let me know. You may also wish to contact immediate

sources of support such as your family, friends, or a trusted professional (e.g., a therapist). Further support information will be provided in a debrief sheet after the interview.

**What will happen after the study?**

I will read and send you a debrief sheet and a list of helpful organisations after the interview. I will also ask if you would like to provide feedback on your experience of being interviewed.

You will be offered monetary compensation for your time and energy, and to help you fund any additional support you may have required to participate in this study.

I will email you a summary of the findings once the data analysis is complete and ask if you wish to provide feedback. You can decline to provide feedback if you wish.

**Who is organising and funding the research?**

The research is associated with the University of Hertfordshire Doctorate in Clinical Psychology. Research is a requirement of the programme before qualifying as a Clinical Psychologist working within the NHS.

**Ethical review of the study**

This study has been reviewed by the University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority.

The UH protocol number is LMS/PGT/UH/05351.

The University's regulation, UPR RE01, 'Studies Involving the Use of Human Participants' can be accessed via this link: <https://www.herts.ac.uk/about-us/governance/university-policies-and-regulations-uprs/uprs> (after accessing this website, scroll down to Letter S where you will find the regulation)

**Who can I contact if I have a complaint about the study?**

Secretary and Registrar  
University of Hertfordshire  
College Lane  
Hatfield  
Herts  
AL10 9AB

**Who do I talk to if I have questions?**

If you have any questions, please feel free to ask now or at any time throughout or after the process. My contact details are outlined below.

Karolina Balciunaite (She/Her)  
Trainee Clinical Psychologist  
[k.balciunaite@herts.ac.uk](mailto:k.balciunaite@herts.ac.uk)

The contact details for my primary supervisor are outlined below.

Dr Stephen Pack  
Registered Practitioner Psychologist and ANFT Certified Forest-Therapy Guide  
[s.pack@herts.ac.uk](mailto:s.pack@herts.ac.uk)

**Thank you for taking the time to read this participant information sheet and considering taking part in this study.**



**Appendix K: Participant Consent Form****Participant Consent Form****Research title**

A qualitative study assessing how forest bathing changes the sense of connectedness to self, others, and nature among people with physical health difficulties.

**University of Hertfordshire protocol number**

LMS/PGT/UH/05351

**Statements by participant**

- **I have read and understand the participant information sheet outlining the details of the study.** This includes study aims, methods and design, the names and contact details of key people, and, as appropriate, the risks and potential benefits, how the data collected will be stored and for how long, how the data will be used and shared, any plans for follow-up studies that might involve details of my involvement in the study.
- **I have had the opportunity to ask the researcher any questions, which have been answered to my satisfaction.**
- **I agree to take part in this study, and I understand that my participation in this study is on an entirely voluntary basis.**
- **I understand that I can decline to answer any questions as I see fit.**
- **I have been assured that I can withdraw from the study at any point during the process without a disadvantage or having to give a reason.**
- **I understand that I can withdraw my data within two weeks of taking part in the study.**
- **I agree that my interview can be audio and video recorded and stored confidentially.** I have been informed how the recording will happen, how it will be transcribed, how it will be anonymised, where it will be stored and for how long, and who will have access to it.
- **I understand that parts of my anonymised (i.e., identifiable details removed) transcription may be used in the write-up of the researcher's doctoral thesis and later for publication and dissemination (i.e., widely sharing the study results with the people that can make use of them).**
- **I agree to be emailed the summary of the results once the data analysis is complete. I understand that I can decline to provide feedback on these results if I wish.**
- **I understand that in the event of any significant change to the aim(s) or design of the study, I will be informed and asked to renew my consent to participate in it.**

I give my verbal consent to participate in this study.

I do not consent to participate in this study.

If you wish to receive updates on the study results and any publications or dissemination, please tick this box.

**Participants name:**

**Participant's email address:**

**Participant's chosen pseudonym:**

**Date:**

**Principal investigator:**

**Signature of principal investigator:**

**Date:**

*This study has been reviewed by the University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority.*

*The UH protocol number is LMS/PGT/UH/05351.*

**Appendix L: Participant Debrief Form****Participant debrief sheet**

Thank you very much for your participation in my study.

**Research title**

A qualitative study assessing how forest bathing changes the sense of connectedness to self, others, and nature among people with physical health difficulties.

**University of Hertfordshire protocol number**

LMS/PGT/UH/05351.

**The primary aim was**

This study aimed to explore how people's experience of forest bathing (otherwise known as mindful nature connection) might have changed how they connect to themselves, others, and nature. Specifically, it sought to interview people with physical health difficulties who had attended at least two Accessible Nature Wellbeing Programs (ANWPs) offered by EcoWisdom.

**Key things to remember**

- If you have any further questions about the project and wish to discuss them, you can email me at [k.balciunaite@herts.ac.uk](mailto:k.balciunaite@herts.ac.uk). Alternatively, you can contact my primary supervisor Dr Stephen Pack at [s.pack@herts.ac.uk](mailto:s.pack@herts.ac.uk).
- If you want to withdraw from the study, please email me within two weeks of your interview. After this period, the data analysis will begin.
- A brief summary of research findings will be emailed to you once the study data analysis is complete, and you will be given an opportunity to provide feedback on this.
- You will be informed via email about any publications or presentations.
- If you have any complaints about this study, you can contact:  
Secretary and Registrar  
University of Hertfordshire  
College Lane  
Hatfield  
Herts  
AL10 9AB

**Sources of further support**

I hope participating in this study has proven to be a positive experience for you. However, if you feel that this survey raised any uncomfortable feelings for you, or you are struggling with your well-being and require further help, please speak to someone you trust, such as your family, a friend, or a trusted professional (e.g., a therapist). Alternatively, below is a list of organisations that offer emotional support.

- **Wellness Together Canada:** *Offers free and confidential mental health and substance use support, available 24 hours a day, 7 days a week.*

Call 1-866-585-0445 or text WELLNESS to 741741 for adults

For more information visit: <https://www.wellnesstogether.ca/en-CA?lang=en-ca>

- **Talk Suicide Canada:** *If you're having thoughts of suicide, or are worried about someone else, Talk Suicide is here to listen. Connect to a crisis responder for help in English or French without judgment.*

Call 1-833-456-4566 toll-free, any time – or text 45645 from 4 p.m. to midnight ET.

For more information visit: <https://talksuicide.ca/>

- Visit this website to find various other mental health and social support services:  
<https://www.ementalhealth.ca/>

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*The UH protocol number is LMS/PGT/UH/05351.*

Appendix M: NVivo Coding Extract Examples

Karolina: Okay. And have you noticed any changes at all to your self-esteem, and how you see yourself, how you feel about yourself?

Feather: It's very gradual, that process. And I think that practicing. I mean, I'm very, very fortunate, too, in that I live [redacted] you know, in a rural area that has, it's quite beautiful. And I can go out every day in my chair, even though I'm not driving, and there's no transit here. That, I can still go inside. And, you know, go along the trees or hear the sound of the water. It's not, the water was sort of man-made here, but nonetheless it is a natural, it's a replica, you know, in an environment. So the sound is there which is always nice. The bugs, I can hear a fly right now. Yeah, it's just the time spent with it, and in it. I think, that each time you practice it, it becomes that little bit of calm. Or that seeing things not from a... I am seeing it from a human point of view, but knowing that there's another world going on right beside me there, that is not making, you know, I don't feel any judgment from. Like there's no, I don't really know how the natural kingdom really interacts with it, so. And that I can simply observe it and observe it change, and that. Just doing that just like a reminder to me that we don't really know anything. But that. Yeah, I guess when I go out here I look and reassured just by being in it. But at the same sense, I'm always aware that the day you know there, there are fires now on the West coast here. Luckily there aren't too many where we are, but this always in the background of my mind there's always that risk now. And, how quick and devastating they can be! So it makes me just be a little bit more present to what is when I go out there.

Karolina: Yeah. And that feeling of connecting going out there and noticing, like you said, those bugs are those little details around you and practicing that nature connection. What does that do, if anything, to your self-esteem, or how you feel about yourself?

Feather: My self-esteem... I guess in some sense, I don't have to prove myself, I don't have to respond in a sense. If I... What does it do to my self-esteem? I guess, you know, it's reminding me that I don't have to say anything that's inauthentic, or or, you know, if I can't do anything about it, that it just needs to sit. And I don't have to let it take hold of me. And that raises self-esteem in a sense, because then you're. You're just more comfortable with yourself. But that's like a an integral kind of feeling for oneself. Yeah, I mean, I have gone through some dark times and this is much better.

CODE STRIPES

Coding Density

- Increased awareness of one's natural surroundings
- Can't imagine life without nature
- Stronger connection with others
- From rushing to slowing down
- Growing up with nature
- Awakening creativity
- Taking photographs of nature
- Relating to others' experiences within the group
- Feeling accepted by the group
- Sense of higher power
- Feeling gratitude and appreciation of the natural world
- Noticing little details in nature
- Opening up to oneself and others
- Increased awareness of one's impact on others
- Enjoying nature connection
- Reconnecting to the inner child
- People are naturally drawn to nature
- Feeling calm, relaxed, and peaceful
- Recognising the ego states' in self and others
- Feeling grounded
- Learning from other group members
- Overcoming fear
- Increased awareness and pain about world suffering
- Acceptance of a/rth
- Practising mindful being with nature
- Learning how to connect to nature with the heart and not with the mind
- We are all interconnected
- Accepting others as they are
- Sensory visualisation requires self-compassion for people with disabilities
- Accessible ways to connect to nature
- Feeling the awe of the natural world
- Permission to be yourself

Karolina: So the first question to you is, how has your experience of these nature programs from equal wisdom changed how you connect to yourself?

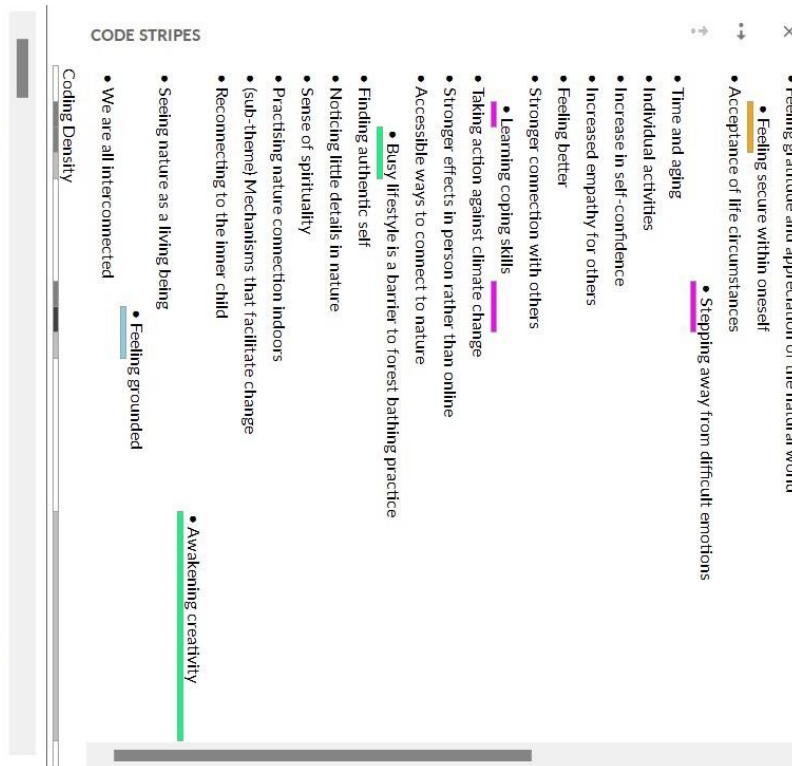
Bob: I think it has thought me skills, how to be a stronger individual mentally and emotionally. I work a lot, I'm a workaholic, and these have allowed me to reconnect with nature.

Karolina: Hmm, okay. So, could you expand a little bit more what you mean by stronger individual, you know, emotionally and mentally?

Bob: Sure, I think there are techniques that I've learned that help me when I become anxious or stressed out to step away and to re-centre myself.

Karolina: Okay. Would you mind giving me an example, maybe, of when you had to do, a situation that occurred recently where you had to implement that technique, and I guess, guide me step by step of what would you do in those situations?

Bob: Yes, okay. So I, erm, this isn't work related. But planning my upcoming trip to [redacted] There have been pretty few logistical challenges, and there are times when it feels like, I'm hitting nothing but dead ends and it can be very frustrating that. And so I will step away from the computer, go outside in the nature. We have a very serene environment around my home. And go for a walk and just appreciate the birds and the trees and try to focus my energy on that. And by doing so it allows me to come up with creative solutions that to these obstacles.



be presence for my son. And just finding those micro moments. Like, you know what I'm going to stop and smell these lilacs, and I don't care if another parent sees me sticking my nose in the flowers. I'm not going to pretend to just do a small little whiff. I'm going to be like, no, this is beautiful. And I think before the programming I would have, you know, tried to like, just sneak a little smell be scared about somebody seeing me. And now I'm just like, nope, I'm connecting with nature. This is maybe the only time I'm gonna get right now, so I'm gonna take it. And again, like, you know, my son and and his little friend would be playing in in the sand, and, you know, sort of like a dirt standpile just in the corner by preschool. And just like feeling so excited that he's he's playing in the sand, and he's looking at these rocks. And, you know, I like we were always outside anyway, it was nothing like different. But just sort of the shift of like he's playing in the soil, he's playing in like the earth, and he's so happy here, and I'm not worried that he's dirty, and I'm gonna have to wash all his clothes. It's just like this nice feeling that he's outside experiencing the earth. He would often like him, and his body would climb the trees out there. And well, you know, instead of being like oh, like, let me try and look something up on my phone while he's in the tree. I like I would be present, and looking at the bark of the tree, and just kind of looking at the leaves, and I see a little bug. And I go, guys, look at this bug! And noticing more about the bug, like, look at the iridescence, oh it's got these tinny beautiful wings! Like, going a lot deeper, I think, than I normally did in the past. Yeah, and like not being afraid to share stuff. There was a wild rose bush by like by the day care. And kind of like talking to the, the other little boy, his mom about it, whereas before I might not said anything like. Oh, yeah, you know, you can make her tea from these, as part of the plant, and sort of more confident to share my knowledge. And again, like not that stressed of, I need to sit down and be quiet and experience nature. I can just look at what's around me, right? I can look at the clouds, and instead of like, oh, it might rain, we'd better get home. Just be like, okay, if it rains on us it rains on us. You know we had a beautiful experience where it looked like it was going to rain, and he didn't want to go home, and I was like, all right. let's let's walk to the park. And like, as we turned around the corner of the building, there was at this beautiful rainbow, and it started to rain, and I was like, wow! Like, if we could have just rushed to go home we wouldn't have seen that, and if I was so caught up

CODE STRIPES

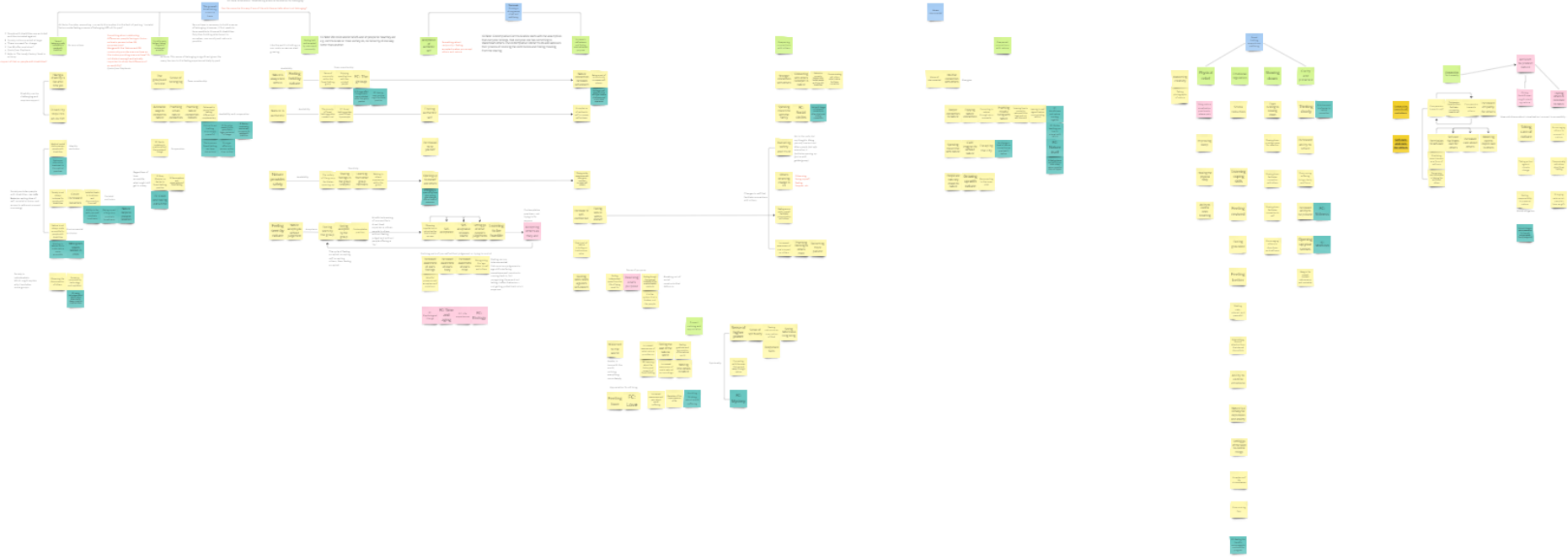
Coding Density

- Can't imagine life without nature
- Mindful presence and acceptance of emotions
- Practising nature connection indoors
- Busy lifestyle is a barrier to forest bathing practice
- Increased awareness of what nature provides us
- Connecting to nature through micro moments
  - Noticing little details in nature
- Permission to be yourself
- Deeper connection to nature
- Opening up to oneself and others
- Increase in self-confidence
- Wanting to take action to make nature more accessible
- Taking action against climate change
- Recognising own boundaries in helping the world and others
- Observing imperfections in nature teaches how to accept our own
- Letting go of other people's judgements
- Sharing feelings in the group is helpful
- Using nature visualisation practices to release pain
- Stronger connection with others
- Nature is not always accessible for people with disabilities
- Self-acceptance
  - Encouraging others to connect to nature
  - Growing up with nature
  - Seeing nature as a living being
- Communicating with others about to
- Feeling the awe of
- Accessible ways to com

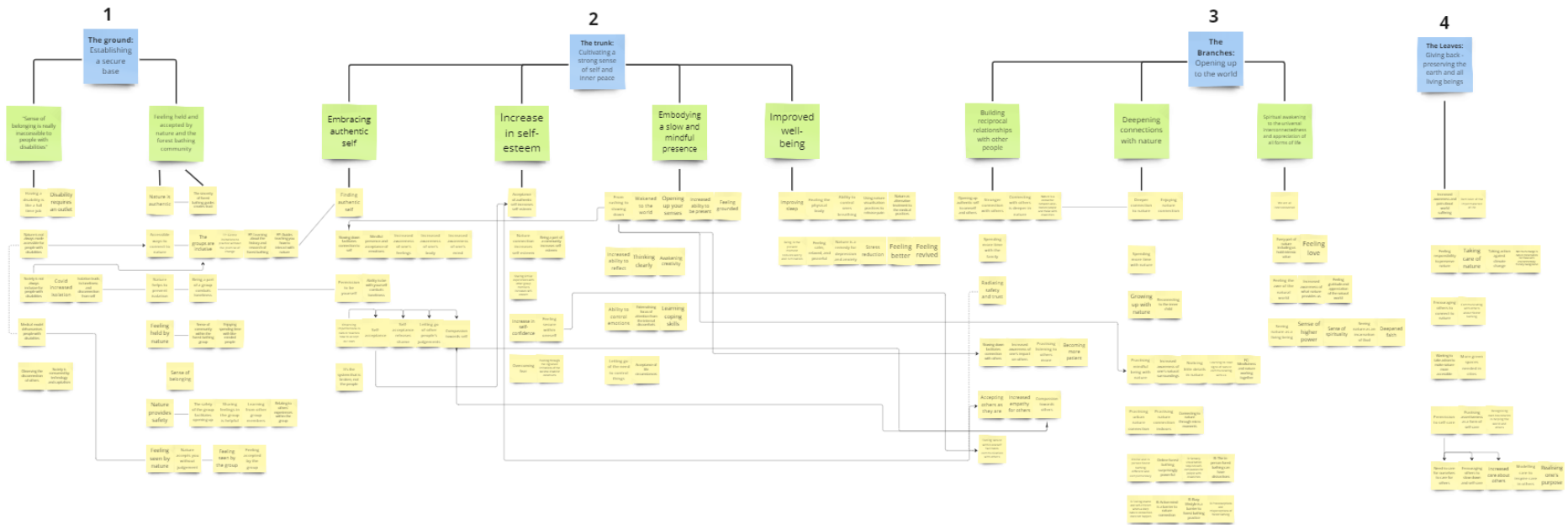


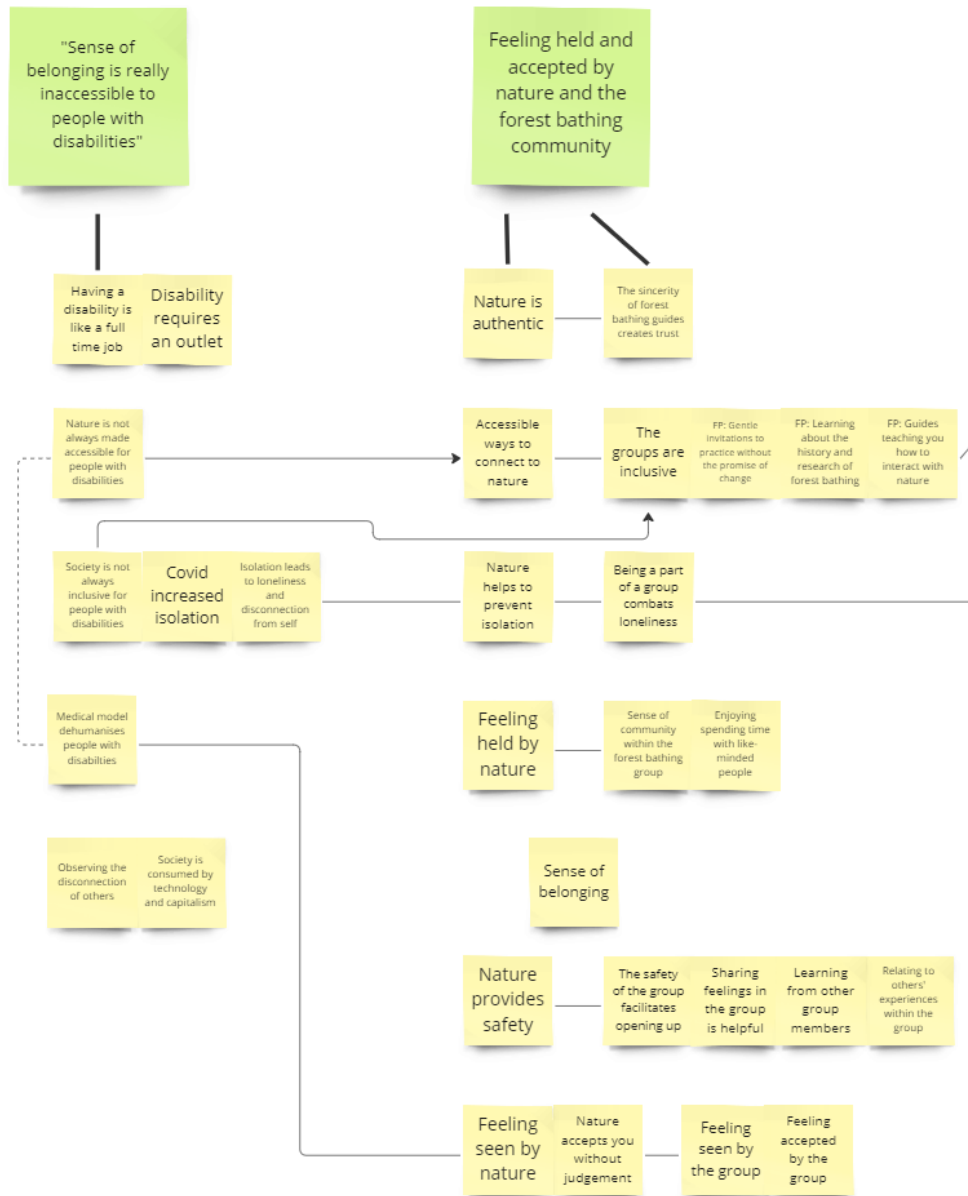


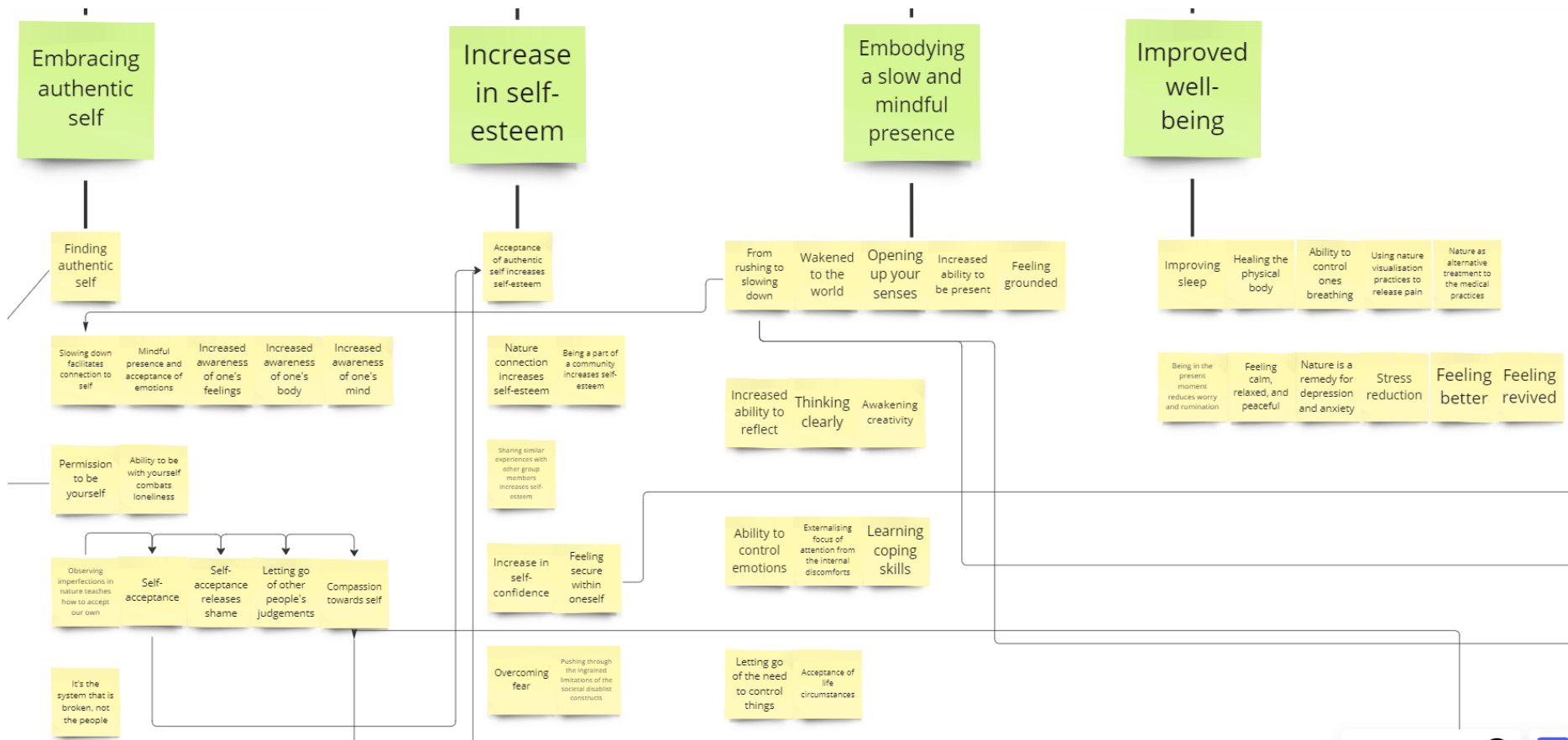
RTA theme draft example 2

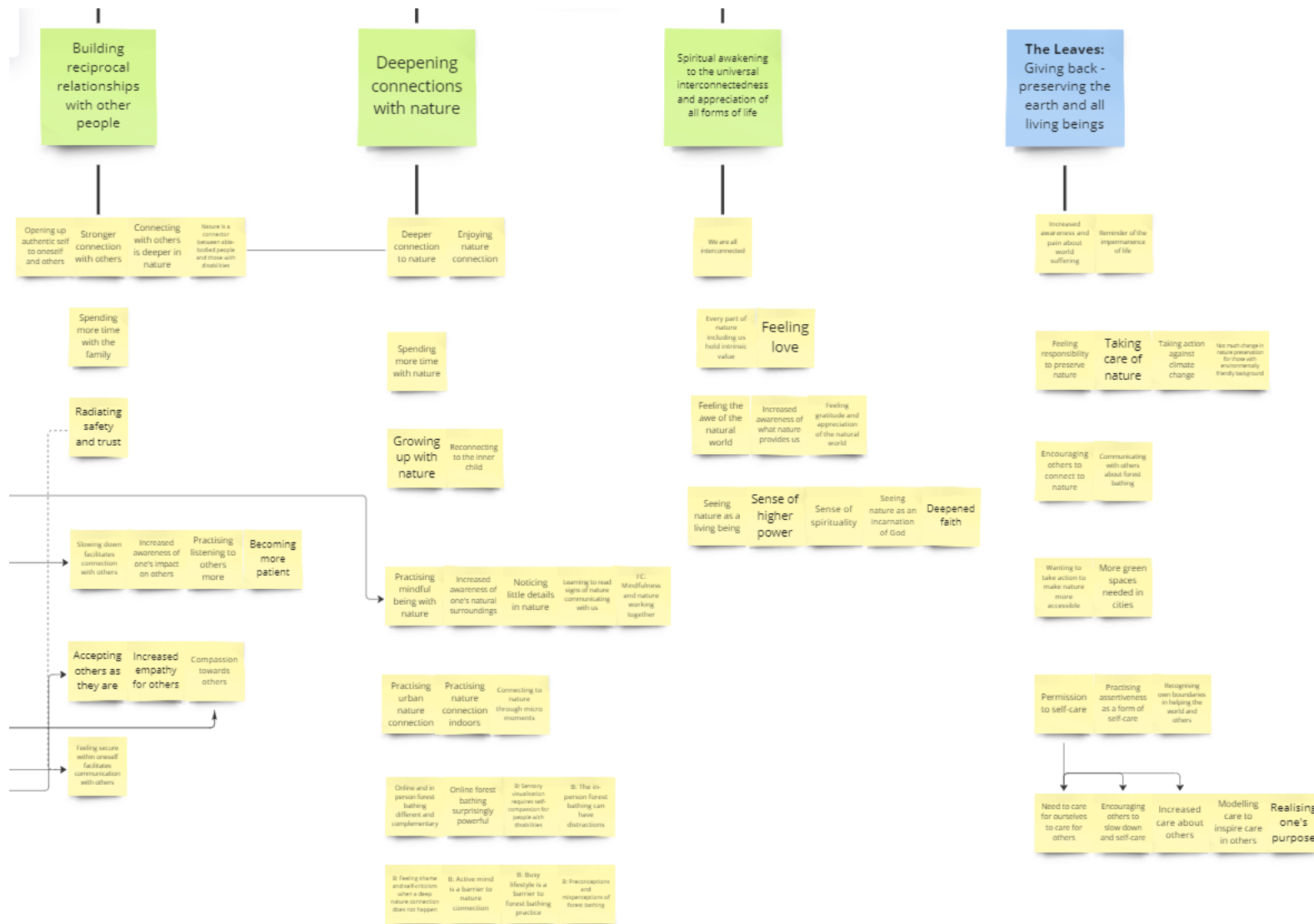


Final RTA themes and sub-themes









**Appendix O: Results Summary and Member Reflection Invitation****Research Findings Summary & Feedback Invitation****Research title:**

Experiences of change in connectedness through forest bathing amongst adults with physical health difficulties.

**Introduction:**

This document presents the final four themes and their sub-themes generated from the data of the study you participated in.

A theme refers to the main idea generated from the research interviews. A sub-theme represents a specific element related to that theme.

These are outlined in different ways to facilitate the ease of understanding given your personal preference:

- Page 3 – a visual map
- Page 4 – a graphic map
- Pages 5 – 11 – a summary table (providing you with a brief textual description of each theme and sub-theme)

**What am I being invited to do?**

I invite you to share your thoughts, reflections, critiques, confirmations, and any other feedback you may have on the study's findings. I would be grateful if you could share your thoughts with me by replying to my email by 05/05/2024. Your participation is voluntary, and you can decline to give feedback if you wish.

**How will my feedback be used?**

Your feedback will allow me to see whether the findings of this study make sense to you and are helpful in fostering a better understanding of the kinds of changes related to connectedness that can take place through the forest bathing programs for people with physical health difficulties. I will then discuss your anonymous feedback with my research team and engage in further reflections to decide whether any amendments to the final list of themes and sub-themes are required. Please note that due to the time limitations of this study, no major amendments will be possible at this stage. Finally, I will include a summary of the main points from participants' feedback in the write-up of this study.

**How will my feedback be kept confidential?**

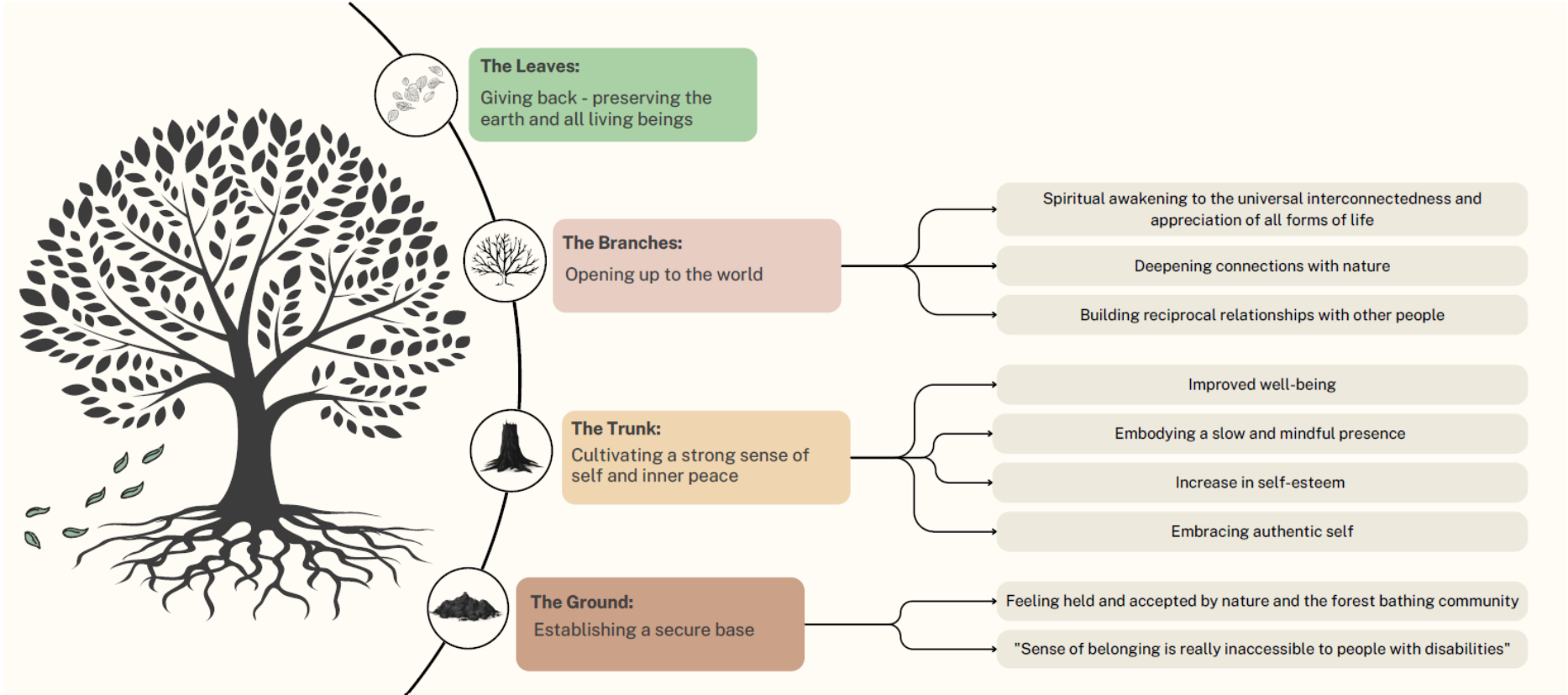
Your email reply will be stored confidentially on a secure University of Hertfordshire's OneDrive system in a password-protected document until I complete my doctorate in clinical psychology, in accordance with the University of Hertfordshire Ethics and Research Integrity guidelines. The copy of your email reply will be destroyed after this point.

You will remain anonymous when reporting and publishing the study's feedback. All your identifying features will be removed so that no one else but me can identify you.

*This study has been reviewed by the University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority. The UH protocol number is aLMS/PGT/UH/05351(1).*

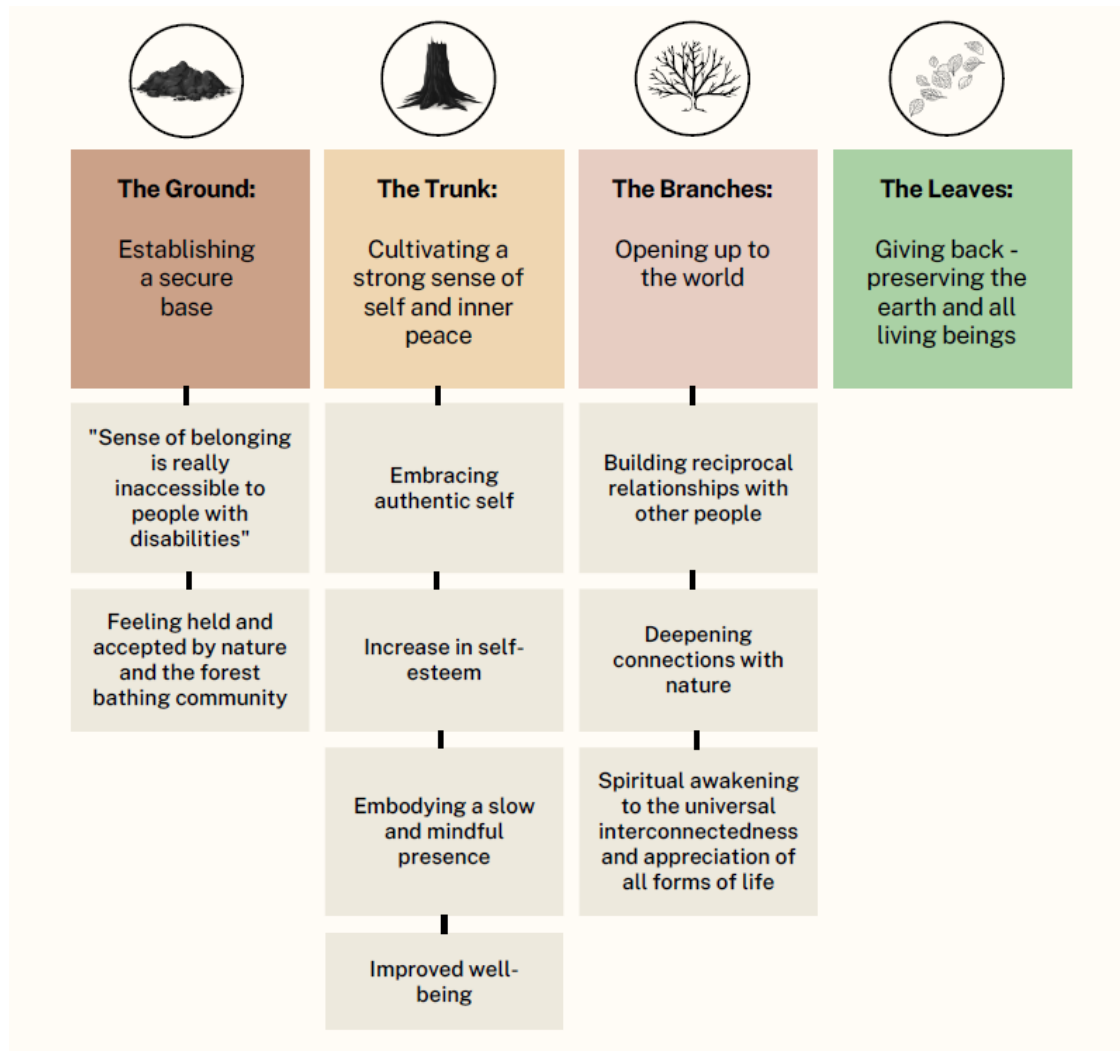
**Thank you for taking the time to support this study!**

Visual map





Graphic map



Summary table

Themes	Theme description	Sub-themes	Sub-theme description
<p><b>The Ground:</b> Establishing a secure base</p>	<p>Within this theme, two contrasting pathways emerge: the challenge of inaccessible societal structures for individuals with disabilities and the nurturing embrace of nature and the forest bathing community. While the former highlights the struggles of exclusion and dehumanisation, the latter underscores the profound sense of belonging and acceptance found in the natural world and supportive communities. Despite societal barriers, individuals find solace, connection, and a secure base through immersion in nature and participation in inclusive, supportive groups.</p>	<p>1) "Sense of belonging is really inaccessible to people with disabilities"</p>	<p>People expressed that living with a disability can feel like managing a full-time job, necessitating an outlet. Unfortunately, nature and society often lack accessibility for those with disabilities, exacerbating feelings of isolation and exclusion. People shared that the COVID-19 pandemic further heightened societal isolation, disproportionately impacting individuals with disabilities. This isolation fosters loneliness and a sense of disconnection from oneself. Moreover, people expressed that the prevailing medical model tends to dehumanise people with disabilities. Society at large appears disconnected, consumed by the relentless forces of technology and capitalism, which can further marginalise those already facing barriers to inclusion.</p>
		<p>2) Feeling held and accepted by nature and the forest bathing community</p>	<p>People found that nature's authenticity resonated with them, appreciating the sincerity of forest bathing guides who lead by example and embody the practices themselves. The gentle invitations to forest bathing without the promise of change were well-received, along with learning about its history and research, facilitating engagement. They also noted that forest bathing programs offer accessible ways to connect with nature and found the groups to be inclusive, combating feelings of exclusion and isolation. Participants felt held by nature and within the forest bathing community, experiencing a sense of belonging and safety that allowed them to open up and share their feelings without judgment. People valued the community aspect, spending time with like-minded people, learning from and relating to each other's experiences, and using contemplative practices in communication with one another. However, some expressed a preference towards individual practice and the ability to follow one's own</p>

			<p>routine. Overall, nature and forest bathing groups provided a space where people felt seen and accepted, fostering a sense of belonging.</p>
<p><b>The Trunk:</b> Cultivating a strong sense of self and inner peace</p>	<p>This theme encapsulates individuals' transformative journey as they embrace their authentic selves, nurture self-esteem, embody mindfulness, and experience improved well-being through connection with nature and the forest bathing community. Participants articulate a profound shift towards self-acceptance, shedding societal expectations and embracing their true essence. This journey unfolds through various practices, including mindful self-awareness, engagement with nature, and communal experiences leading to heightened self-compassion, confidence, emotional harmony, and resilience.</p>	<p>1) Embracing authentic self</p>	<p>People spoke about personal growth and self-discovery. Slowing down allowed them to connect with their authentic selves, fostering increased awareness of their feelings, bodily sensations, and thoughts. Engaging in mindful self-awareness, they learned to accept themselves without judgment or the need for control, granting themselves permission to be their authentic selves. The ability to be present with themselves helped combat feelings of loneliness. Observing imperfections in nature taught them to accept their own, leading to increased self-acceptance and a release of shame. Participants also found they were better equipped to let go of others' judgments, cultivating increased self-compassion and humility. Overall, they recognised that the system is broken, not the individuals, emphasising the importance of self-acceptance and compassion.</p>
		<p>2) Increase in self-esteem</p>	<p>People found that accepting their authentic selves increased their self-esteem. Connecting to nature, being part of a community, and sharing similar experiences with others further contributed to this sense of self-worth. People expressed feeling empowered to overcome societal limitations and fears. Additionally, finding independent space from a life of being cared for was seen as instrumental in building independence. Over time, individuals felt more confident and secure within themselves.</p>
		<p>3) Embodying a slow and mindful presence</p>	<p>Engaging in forest bathing has led individuals to transition from rushing to slowing down, allowing them to become more attuned to the world around them and to open their senses. This heightened presence has grounded them in the moment, fostering stillness and mindfulness. Slowing down also provides space for reflection, enhancing their ability to think clearly and tap into their creativity.</p>

			<p>Overcoming emotional or physical suffering has further sharpened their focus and clarity. Participants reported increased control over their emotions, finding that externalising their focus helps regulate them, and they've learned effective coping skills in the process. Moreover, they've gained the ability to let go of the need for control and to accept life circumstances as they are, leading to a deeper sense of peace.</p>
		<p>4) Improved well-being</p>	<p>People reported that participation in forest bathing sessions has led to improvements in their sleep and a reduction in stress levels. They also reported an increased ability to control their breathing and a sense of calmness and relaxation. Nature has been perceived as a source of healing, which could be used as an alternative treatment to medical practices. Visualisation practices were seen to aid the pain release. Participants have found nature to be a remedy for depression and anxiety, attributing its calming presence to reducing worry and rumination. Overall, they've expressed feeling better, revived, and emotionally at peace. These experiences have led to improved well-being both emotionally and physically.</p>
<p><b>The Branches:</b> Opening up to the world</p>	<p>This theme focuses on individuals opening up to building reciprocal relationships with others, deepening their connections with nature, and experiencing a spiritual awakening to the universal interconnectedness of all life forms. People describe enriched interpersonal connections facilitated by the forest bathing community and the immersion in natural environments, where communication flows more freely and empathy flourishes. This deepening of relationships is underpinned by personal growth, including heightened empathy, compassion, and acceptance of self and other beings. Moreover, participants express a profound sense of belonging and reverence towards nature, experiencing awe, gratitude, and spiritual awakening. Through</p>	<p>1) Building reciprocal relationships with other people</p>	<p>Engagement in forest bathing has notably strengthened individuals' connections with others, fostering deeper bonds and facilitating communication. Participants found that connecting with others in nature was particularly profound and acted as a bridge between individuals of varying abilities. Additionally, many reported spending more quality time with family. Personal changes such as radiating safety and trust, slowing down, and increased empathy and compassion were identified as key factors in enhancing connections. Practising patience, accepting others as they are, and being secure within oneself were also noted as supporting connections. Furthermore, other people observed positive changes in participants, further affirming the impact of these personal transformations on interpersonal relationships.</p>

	<p>recognising the intrinsic value of all living beings and embracing a sense of interconnectedness, individuals navigate towards a more expansive understanding of the world and their place within it.</p>	<p>2) Deepening connections with nature</p>	<p>Individuals have expressed a deeper connection to nature, finding joy and spending more time immersed in natural environments. Participants feel naturally drawn to the outdoors, with many recalling fond memories of playing in nature as children and reconnecting with their inner child. For those who grew up surrounded by nature, there was no significant change in their level of nature connection. Participants have shared their experiences of practising mindful engagement with nature, which has led to an increased awareness of their natural surroundings and a keen observation of small details in the environment. They described connecting with nature through micro-moments and learning to interpret the signs of nature's communication. They noted that mindfulness and nature complement each other, with the practice of mindfulness enhancing their connection to nature and vice versa. Additionally, guides who teach people how to interact with nature have been found to be helpful in facilitating these experiences and deepening their understanding of the natural world.</p> <p>Individuals have embraced forest bathing through various approaches, including practising urban nature connection or in natural environments outside the city, engaging in nature connection indoors with house plants or online. They've found that online and in-person forest bathing offers distinct yet complementary experiences. People expressed that online sessions can be surprisingly powerful, particularly through group dynamics. However, they pointed out that engagement in sensory visualisation exercises may be challenging to people who have acquired disabilities later in life as it may evoke feelings of pain or bitterness and a level of self-compassion would be required to facilitate these. Overall, participants reported stronger effects from in-person sessions despite potential distractions. However, barriers to nature connection persist, such as feelings of shame and self-criticism when the</p>
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			<p>connection doesn't occur as expected, an active mind, busy lifestyles, and preconceived notions about forest bathing.</p>
		<p>3) Spiritual awakening to the universal interconnectedness and appreciation of all forms of life</p>	<p>People reported feeling a deep sense of interconnectedness with all living beings and an intuitive connection with others through energies. Realising the intrinsic value held by every part of nature, including themselves, has led to feelings of love, appreciation, and gratitude towards all living beings. Moreover, individuals have expressed a heightened sense of awe towards the natural world and increased awareness of the gifts that nature provides us. People spoke about viewing nature as a living being and a manifestation of a higher power or God, which has deepened their spirituality and faith.</p>
<p><b>The Leaves:</b> Giving back - preserving the earth and all living beings</p>	<p>Participation in forest bathing has led individuals to become more aware of and empathetic towards the suffering in the world, although some find it too painful to confront. This awareness has served as a reminder of the impermanence of life and instilled a sense of responsibility to preserve nature. In response, people have taken action to care for the environment and combat climate change, though those already environmentally conscious haven't significantly changed their preservation efforts. Additionally, participants have actively cultivated a nature community by encouraging others to connect with nature, discussing forest bathing, and sharing nature-themed gifts. Recognising the importance of accessibility, they've expressed a desire to make nature more accessible and have been advocating for more green spaces in cities. Importantly, individuals have prioritised self-preservation, granting themselves permission for self-care, asserting boundaries, and recognising the balance between helping others and preserving their own well-being. This self-care extends to others as well, as individuals have encouraged others to slow down and care for themselves, fostering</p>	<p>N/A</p>	<p>N/A</p>

	<p>a culture of mutual care and support. Some have even discovered a sense of purpose in helping others and have been modelling care and compassion in their communities.</p>		
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## Appendix P: Results Summary and Member Reflection Invitation Video and Transcript

### Video link introducing the contents of the 'Research Findings Summary & Feedback Invitation' document

[https://herts-ac-uk.zoom.us/rec/share/KefbPYY9\\_w-2bmv0u066DOyN-pxqAt9iBWx3PJTzpbx1LnDYd1Q9St9R3iWTU6Nm.VM8qCYMU\\_XycHwfg?startTime=1713602395000](https://herts-ac-uk.zoom.us/rec/share/KefbPYY9_w-2bmv0u066DOyN-pxqAt9iBWx3PJTzpbx1LnDYd1Q9St9R3iWTU6Nm.VM8qCYMU_XycHwfg?startTime=1713602395000)

*This study has been reviewed by the University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority. The UH protocol number is aLMS/PGT/UH/05351(1).*

### Video transcript

Hello, everyone, and thank you once again for participating in my research interviews last summer.

This research explored the experiences of change in connectedness through forest bathing amongst adults with physical health difficulties.

There were 15 of you who took part in the study. I appreciate you taking the time to share your stories and experiences with me, and it was a great pleasure to meet you all.

I have analysed the data from all the interviews and I am reaching out to you to share a summary of the results, as promised.

The data analysis process involved me deep-diving into each of your stories, looking for patterns or common ideas between them, and grouping these ideas together.

This process resulted in generating four themes, each of which has sub-themes.

A theme refers to the main idea generated from the research interviews.

A sub-theme represents a specific element related to that theme.

I have prepared a document for you where I have outlined these four themes and their sub-themes in different ways to facilitate the ease of understanding given your personal preference.

I have included a visual map, a graphic map and a summary table, providing you with a brief textual description of each theme and sub-theme.

I invite you to share your thoughts, reflections, critiques, confirmations, and any other feedback you may have on the study's findings. I would be grateful if you could share your thoughts with me by replying to my email by the 5<sup>th</sup> of May this year. Your participation is voluntary, and you can decline to give feedback if you wish.

Your feedback will allow me to see whether the findings of this study make sense to you and are helpful in fostering a better understanding of the kinds of changes related to connectedness that can take place through the forest bathing programs for people with physical health difficulties. I will then discuss your anonymous feedback with my research team and engage in further reflections to decide whether any amendments to the final list of themes and sub-themes are required. Please note that due to the time limitations of this study, no major amendments will be possible at this stage. Finally, I will include a summary of the main points from participants' feedback in the write-up of this study.

Your email reply will be stored confidentially on a secure University of Hertfordshire's OneDrive system in a password-protected document until I complete my doctorate in clinical psychology, in accordance with the university's ethics guidelines. The copy of your email will be destroyed after this point.

You will remain anonymous when reporting and publishing the study's feedback. All your identifying features will be removed so that no one else but me can identify you.

Thank you for taking the time to support this study!



### Appendix Q: 15-point Checklist for Good Reflexive Thematic Analysis

#### A 15-Point Checklist for Good Reflexive Thematic Analysis (Braun & Clarke, 2022)

Process	No.	Criteria
Transcription	1.	The data have been transcribed to an appropriate level of detail; all transcripts have been checked against the original recordings for 'accuracy'.
Coding	2.	Each data item has been given thorough and repeated attention in the coding process.
	3.	The coding process has been thorough, inclusive and comprehensive; themes have not been developed from a few vivid examples (an anecdotal approach).
	4.	All relevant extracts for all each theme have been collated.
	5.	Candidate themes have been checked against coded data and back to the original dataset.
	6.	Themes are internally coherent, consistent, and distinctive; each theme contains a distinct central organising concept; any subthemes share the central organising concept of the theme.
	Analysis	7.
8.		Analysis and data match each other – the extracts evidence the analytic claims.
9.		Analysis tells a convincing and well-organised story about the data and topic; analysis addresses the research question.
10.		An appropriate balance between analytic narrative and data extracts is provided.
Overall	11.	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase, or giving it a once-over-lightly (including returning to earlier phases or redoing the analysis if need be).
Written report	12.	The specific approach to thematic analysis, and the particulars of the approach, including theoretical positions and assumptions, are clearly explicated.
	13.	There is a good fit between what was claimed, and what was done – i.e. the described method and reported analysis are consistent.
	14.	The language and concepts used in the report are consistent with the ontological and epistemological positions of the analysis.
	15.	The researcher is positioned as active in the research process; themes do not just 'emerge'.

## Appendix R: Ethics Approval



HEALTH, SCIENCE, ENGINEERING AND TECHNOLOGY ECDA

**ETHICS APPROVAL NOTIFICATION**

TO Karolina Balciunaite

CC Dr Stephen Pack (Primary Internal Supervisor) and Dr Kirsten McEwan (Secondary External Supervisor)

FROM Dr Rebecca Knight, Health, Science, Engineering & Technology ECDA Vice Chair

DATE 25/05/2023

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Protocol number: LMS/PGT/UH/05351

Title of study: A qualitative study assessing how forest bathing changes the sense of connectedness to the self, others, and nature among people with physical health difficulties.

Your application for ethics approval has been accepted and approved with the following conditions by the ECDA for your School and includes work undertaken for this study by the named additional workers below:

**Karen Van Biesen – Research Consultant (Expert by Experience EcoWisdom Access Consultant & Certified Nature and Forest Bathing Guide, Canada)**  
**Kari Krogh – Research Consultant (Expert by Experience & Co-founder of EcoWisdom Forest Preserve, Canada)**

**Conditions of approval specific to your study:**

Ethics approval has been granted subject to the following conditions being seen and approved by the supervisor as addressed prior to recruitment and data collection:

- **Please add the supervisor's contact details to the information sheet and debrief sheet**

**General conditions of approval:**

Ethics approval has been granted subject to the standard conditions below:

**Permissions:** Any necessary permissions for the use of premises/location and accessing participants for your study must be obtained in writing prior to any data collection commencing. Failure to obtain adequate permissions may be considered a breach of this protocol.

**External communications:** Ensure you quote the UH protocol number and the name of the approving Committee on all paperwork, including recruitment advertisements/online requests, for this study.

**Invasive procedures:** If your research involves invasive procedures you are required to complete and submit an EC7 Protocol Monitoring Form, and copies of your completed consent paperwork to this ECDA once your study is complete.

**Submission:** Students must include this Approval Notification with their submission.

**Validity:**

This approval is valid:

From: 25/05/2023

To: 31/10/2023

**Please note:**

**Failure to comply with the conditions of approval will be considered a breach of protocol and may result in disciplinary action which could include academic penalties.**

Additional documentation requested as a condition of this approval protocol may be submitted via your supervisor to the Ethics Clerks as it becomes available. All documentation relating to this study, including the information/documents noted in the conditions above, must be available for your supervisor at the time of submitting your work so that they are able to confirm that you have complied with this protocol.

**Should you amend any aspect of your research or wish to apply for an extension to your study you will need your supervisor's approval (if you are a student) and must complete and submit form EC2.**

Approval applies specifically to the research study/methodology and timings as detailed in your Form EC1A. In cases where the amendments to the original study are deemed to be substantial, a new Form EC1A may need to be completed prior to the study being undertaken.

**Failure to report adverse circumstance/s may be considered misconduct.**

Should adverse circumstances arise during this study such as physical reaction/harm, mental/emotional harm, intrusion of privacy or breach of confidentiality this must be reported to the approving Committee immediately.

**Appendix S: Ethics Approval – First Amendment**

HEALTH, SCIENCE, ENGINEERING AND TECHNOLOGY ECDA

**ETHICS APPROVAL NOTIFICATION**

TO Karolina Balciunaite  
CC Dr Stephen Pack  
FROM Dr Rebecca Knight, Health, Science, Engineering and Technology  
ECDA Vice-Chair  
DATE 18/04/2024

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Protocol number: aLMS/PGT/UH/05351(1)

Title of study: Experiences of change in connectedness through forest bathing amongst adults with physical health difficulties.

Your application to modify and extend the existing protocol as detailed below has been accepted and approved by the ECDA for your School and includes work undertaken for this study by the named additional workers below:

**Karen Van Biesen – Research Consultant (Expert by Experience EcoWisdom Access Consultant & Certified Nature and Forest Bathing Guide, Canada)**  
**Kari Krogh – Research Consultant (Expert by Experience & Co-founder of EcoWisdom Forest Preserve, Canada)**

**Modification:**

Extended dates and revised title of study as detailed in the approved EC2 application.

**General conditions of approval:**

Ethics approval has been granted subject to the standard conditions below:

**Original protocol:** Any conditions relating to the original protocol approval remain and must be complied with.

**Permissions:** Any necessary permissions for the use of premises/location and accessing participants for your study must be obtained in writing prior to any data collection commencing. Failure to obtain adequate permissions may be considered a breach of this protocol.

**External communications:** Ensure you quote the UH protocol number and the name of the approving Committee on all paperwork, including recruitment advertisements/online requests, for this study.

**Invasive procedures:** If your research involves invasive procedures you are required to complete and submit an EC7 Protocol Monitoring Form, and copies of your completed consent paperwork to this ECDA once your study is complete.

**Submission:** Students must include this Approval Notification with their submission.

**Validity:**

This approval is valid:

From: 18/04/2024

To: 07/06/2024

**Please note:**

**Failure to comply with the conditions of approval will be considered a breach of protocol and may result in disciplinary action which could include academic penalties.**

Additional documentation requested as a condition of this approval protocol may be submitted via your supervisor to the Ethics Clerks as it becomes available. All documentation relating to this study, including the information/documents noted in the conditions above, must be available for your supervisor at the time of submitting your work so that they are able to confirm that you have complied with this protocol.

**Should you amend any aspect of your research or wish to apply for an extension to your study you will need your supervisor's approval (if you are a student) and must complete and submit a further EC2 request.**

Approval applies specifically to the research study/methodology and timings as detailed in your Form EC1A or as detailed in the EC2 request. In cases where the amendments to the original study are deemed to be substantial, a new Form EC1A may need to be completed prior to the study being undertaken.

**Failure to report adverse circumstance/s may be considered misconduct.**

Should adverse circumstances arise during this study such as physical reaction/harm, mental/emotional harm, intrusion of privacy or breach of confidentiality this must be reported to the approving Committee immediately.

**Appendix T: Ethics Approval – Second Amendment**

HEALTH, SCIENCE, ENGINEERING AND TECHNOLOGY ECDA

**ETHICS APPROVAL NOTIFICATION**

TO Karolina Balciunaite  
CC Dr Stephen Pack  
FROM Dr Simon Trainis, Health, Science, Engineering and Technology  
ECDA Chair  
DATE 26/04/2024

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Protocol number: aLMS/PGT/UH/05351(2)

Title of study: Experiences of change in connectedness through forest bathing amongst adults with physical health difficulties.

Your application to modify and extend the existing protocol as detailed below has been accepted and approved by the ECDA for your School and includes work undertaken for this study by the named additional workers below:

**Karen Van Biesen – Research Consultant (Expert by Experience EcoWisdom Access Consultant & Certified Nature and Forest Bathing Guide, Canada)**  
**Kari Krogh – Research Consultant (Expert by Experience & Co-founder of EcoWisdom Forest Preserve, Canada)**

**Modification:**

Use of data beyond the study and other modifications as detailed in the approved EC2 application.

**General conditions of approval:**

Ethics approval has been granted subject to the standard conditions below:

**Original protocol:** Any conditions relating to the original protocol approval remain and must be complied with.

**Permissions:** Any necessary permissions for the use of premises/location and accessing participants for your study must be obtained in writing prior to any data collection commencing. Failure to obtain adequate permissions may be considered a breach of this protocol.

**External communications:** Ensure you quote the UH protocol number and the name of the approving Committee on all paperwork, including recruitment advertisements/online requests, for this study.

**Invasive procedures:** If your research involves invasive procedures you are required to complete and submit an EC7 Protocol Monitoring Form, and copies of your completed consent paperwork to this ECDA once your study is complete.

**Submission:** Students must include this Approval Notification with their submission.

**Validity:**

This approval is valid:

From: 26/04/2024

To: 07/06/2024

**Please note:**

**Failure to comply with the conditions of approval will be considered a breach of protocol and may result in disciplinary action which could include academic penalties.**

Additional documentation requested as a condition of this approval protocol may be submitted via your supervisor to the Ethics Clerks as it becomes available. All documentation relating to this study, including the information/documents noted in the conditions above, must be available for your supervisor at the time of submitting your work so that they are able to confirm that you have complied with this protocol.

**Should you amend any aspect of your research or wish to apply for an extension to your study you will need your supervisor's approval (if you are a student) and must complete and submit a further EC2 request.**


Approval applies specifically to the research study/methodology and timings as detailed in your Form EC1A or as detailed in the EC2 request. In cases where the amendments to the original study are deemed to be substantial, a new Form EC1A may need to be completed prior to the study being undertaken.

**Failure to report adverse circumstance/s may be considered misconduct.**

Should adverse circumstances arise during this study such as physical reaction/harm, mental/emotional harm, intrusion of privacy or breach of confidentiality this must be reported to the approving Committee immediately.

**Appendix U: Reflexive Research Journal Excerpts**

**Reflexive Research Journal Excerpts**

Date and Title	Journal Entry	Photographs (Own Work)
15/10/2022 My first park bathing experience	<p>Today, I had my first guided park bathing experience. This is the closest option I could get to forest bathing living in London, having a busy doctorate schedule. I took my partner with me, and we joined a group of strangers, all of whom were trying forest bathing for the first time. Three volunteers facilitated the session, and it took 1.5 hours to complete. The first few minutes were spent explaining what forest bathing is, acknowledging how it originated in Japan and sharing some beneficial research findings to date. I am not going to lie; even I was a little sceptical about the effect it could have on me. Given that it is only one brief session in the park, it would feel like a mindfulness session at most. It took me 10 minutes to switch my critical brain off and fully immerse myself in nature. It started raining, and the guide instructed us not to run away but to take our hands out of our pockets and open our palms to the rain. It felt so freeing to allow the drops of water to tickle my skin. Walking through the park, I noticed shades of green, yellow, and brown. I have observed a variety of shapes and tuned into the magnitude of sounds. It felt that the park was talking to me and that the branches of the trees were inviting me for a dance. Every piece of nature felt like it had a character of its own. There were fun leaves that could not stop spinning around and more conservative ones that only gently swayed from side to side. As it is autumn season, I saw many leaves fall to the ground, and it made me think of a circle of life – how new leaves grow back until they reach the end and fall, too. I thought to myself: how old are the trees around me? How much have they seen? What stories do they hold? It is incredibly safe here. It felt like home. I was very surprised by the number of smells I could breathe in, especially the scent of lime from a broken tree branch that my partner found on the floor. We were instructed to pick a bunch of natural elements and create an art piece of our own (see picture below). Doing this reminded me of my childhood when I used to make a bouquet of autumn leaves and bring it back to my mom as a gift. All of this felt incredibly relaxing and calming. What got to me most, however, was our last task – to find a tree that was calling for us and to touch it. I knew exactly which tree I wanted to connect to. I touched it with one hand with another; I placed my forehead on it and felt tears pouring down my face. My grandmother was a tree hugger. We used to hug trees when walking down the forest as a kid. She is no longer with me in this world, but by touching this tree, I felt connected to her. I told her that I had missed her in my mind, and I hugged the tree. I felt light and peaceful inside. This was a truly wonderful experience, and it confirmed that I am indeed on the right track with my thesis topic.</p>	
16/11/22 Meeting with Research Consultants	<p>Today was the first time I met with both my research consultants simultaneously. We spent time collaboratively constructing consultants' contracts. Although I arrived at the meeting with a pre-written template to get us started, I made it very clear that this is just an example, and it can be re-designed and re-written in any way the consultants see fit. I felt it was important to ensure this was a process they led rather than me posing pre-set ideas to them. As I opened the space for consultants to express their needs, expectations, abilities, and limitations, they took this space well and communicated all these aspects with me freely. I thoroughly enjoyed moving away from mere consultation to completely</p>	<p>N/A</p>



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co-creating something to guide our work together. It brought a sense of community work, which coincides with how I view forest bathing.

As we looked through the contract, some wording was changed, which made me reflect on the importance of the language I use in this research, which feels considerate and safe. Additionally, both consultants emphasised the importance of clarifying that they will be able to help with this research, but only within the boundaries of their physical health abilities and limitations. This made me view the contract as a flexible guide that may need to be adjusted or amended as we get to know each other through working together rather than a static list of boxes we must stick to throughout the process. It felt more human. It also made me think of my limitations and boundaries I may need to consider to safeguard my well-being throughout this work. It made me want to approach others and myself with care and deep consideration. This served as an excellent reminder to ask my research participants about any required adaptations they may need as I interview them in the future.

The consultants advised me not to use the word 'forest therapy' in my participant materials. They explained that the word 'therapy' is associated with a medical model of disability, where physical health conditions are seen as something wrong with people that needs to be fixed. We discussed the social model of disability that is more inclusive and empowering and does not individualise one's difficulties and sees it as a systemic issue instead. The social model of disability is a contradiction to the biomedical model. One doesn't have to conform to societal norms. The individual is the expert on their own body. This felt in line with how I strive to view disability and a stance I wish to take when approaching my research participants. I reflected on being in a position where the word 'therapy' does not feel threatening to me. I was wondering whether this is due to my privileges or whether it is due to the way I view therapy and how I practise it as a therapist. Either way, I recognise that it is not about my experiences but the meanings my participants hold and my awareness of these and approaching them with care. I also related this to the natural world. The forest can teach us that diversity is natural. It does not discriminate. Could we, as people, learn from this? Could we see ourselves more as a continuum of the natural world and each other as intertwined rather than as separate, as different? I hope one day we will.

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06/06/2023	Following my fourth interview, I felt slightly surprised about participants sharing with me just how active they are and how most built impressive careers, did different sports, had strong social networks, and engaged in various community activities. What does that say about my prejudice about people with disabilities? How has society painted these people to make me think of them as less able, active, lonely and isolated? Some of these people are much more active and social than other people without disabilities, as far as I know. I am feeling ashamed of feeling surprised to hold such underlying beliefs. At the same time, I am feeling grateful to have the opportunity to meet this community and break my own biases. However, this makes me think of how many similar or other types of negative prejudices society holds about people with physical health conditions or disabilities. And how such beliefs deepen the segregation between able and disabled communities. How many opportunities are there created for disabled communities to access spaces that able folks can get to? In other words, how many spaces are designed for people to develop unity, get to know each other, and challenge those biases about one another? Could forest bathing be one of those practices made accessible and inclusive to all across the world?	N/A
Interview Four		

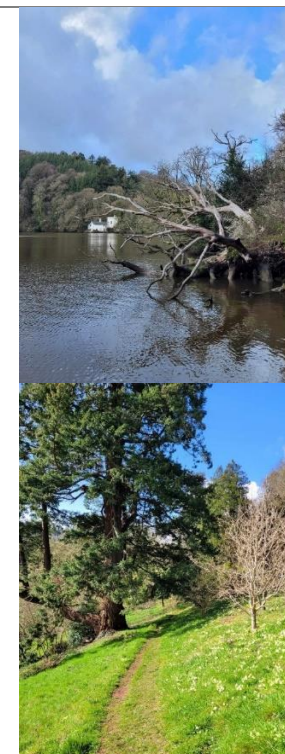
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21/07/2023 Interview Twelve	<p>I just completed an interview with a 12th participant who was initially not sure whether they fit the inclusion criteria to take part. This was due to them not having what is seen as a clearly defined disability through the eyes of a medical lens, but a condition that significantly impacts their mental health and psychologically induced physical challenges. This fits the inclusion criteria for this study and reminded me of why the research consultants and I made a point to state 'self-defined' physical health challenges in the recruitment materials. This is because we recognise that not everyone will fit into a medical box, not everyone will tick the exact number of requirements to meet the diagnostic criteria, and because self-defined physical challenges are just as valid as the diagnosed ones. However, I recognise that this is not how everyone views physical disabilities. How isolating it must feel for someone to suffer pain or fatigue and not to be recognised by the medical professionals who may help. I remember my training in cognitive behavioural therapy and the warning we received to be cautious about the clients who come with so-called 'medically unexplained symptoms'. But does everything need to be medically explained? Does this name not indicate that medical professionals cannot explain it all? There is very little room for the unknown in the medical world. And if something falls into a grey area, it must be given a grey label. Why can't we accept something that we cannot fully explain scientifically, just as valid as something with a profound research background?</p> <p>This leads me to another point that the same participant made. They shared that they tried to bring forest bathing practice into their work in the medical field, which their managers rejected. It was rejected for the same reasons as 'medically unexplained symptoms' tend to be –it does not have enough research backing because it is not fully known because it is new. By doing this research, am I adding to the idea that something needs an evidence base to be seen and accepted? Or do I recognise the system we live in and acknowledge that I cannot change it now and must play by the rules until it eventually shifts? I believe the latter is the case, but I do hope we can change this old-school mentality eventually...</p>	N/A
02/08/2023 Barefoot Transcription	<p>Listening back to the interview recordings and transcribing the interviews behind closed doors at home somehow did not feel right. I felt somewhat disconnected from the stories I had been listening to and distant from the green world the participants described. I wanted to get in touch with the feeling of calm they were referring to; I wanted to find a place to empathise more with individual experiences. I brought my computer outside and planted my feet on the ground (see picture below). This is how I spent most of the remaining hours daily transcribing the interviews. And each day, I felt... More connected to this community. More calm.</p>	
10/09/2023 Reading and Re-reading	<p>Reading the transcripts, the experiences, reflections, beliefs, and feelings participants shared in these interviews resonated so much with me and how I felt whenever I practised nature connection. But why did I feel so heavy deep inside, this sadness reading these experiences? I realise it is because I feel pretty distant from it. This course, these studies, and the time taken to do this research consumed my time entirely and left me no space to breathe and step inside. That means no space to reconnect to myself, to that feeling inside that feels like home, that inner calm. I used to access this</p>	N/A

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Interview Transcripts	<p>space regularly and feel so alive. Now, I feel far from it. Am I the right person to do this research, or does it make me a fraud? Do I have permission to create spaces for people to share their forest bathing experiences when I do not practise them regularly anymore? Can people feel that when I talk to them? Did my heavy energy transmit all the way to Canada? And if so, how did that influence the questions I asked, my responses to people's answers, and my connection to research participants? Would my questions have been different if I was the way I used to be before this course? Would it have led to participants opening up more or sharing richer experiences? As I write this, I look out through the window and see a tree. I immediately feel some reassurance. Maybe it is ok not to be within my inner home right now as long as I can remember and practise remembering. I will return there as soon as I have space to breathe again. I do feel nature is calling me home. And I certainly feel homesick.</p>
08/04/2024  Theme Generation	<p>When I began my initial attempts at theme generation, I noticed my themes closely resembled my research questions. This indicated to me that I was finding what I wanted to see rather than truly connecting to, interpreting, and analysing the data to the data in front of me. I felt stuck. For some reason, I could not see how to move beyond this and take on a more 'analytical' stance.</p> <p>For the last few months, I have been stuck in the city working through this course without much time to breathe. I felt the need to reconnect to the natural world as I could not interpret people's words deeply enough, being somewhat detached from nature. Therefore, I took myself out of London and spent a week in Devon's forests and the seaside. I spent my mornings hiking in nature and evenings generating themes. I then went to a semi-silent meditation, yoga, and nature connection retreat, where I switched off all my devices for four days and re-connected to myself, nature, and people there more profoundly. I also engaged in self-facilitated forest bathing during my spare time there. During my meditations and time in nature there, I had the answers to any questions about theme generation come to me without force. I could visualise the theme map falling into place in front of my eyes. I felt very connected to the data, the participants in Canada, and the whole practice. I definitely felt and still feel the interconnection of it all so much more than before.</p> <p>This research has many personal implications. Although I already approached this work with a preexisting connection to the natural world, I feel that working through this has deepened my respect for it, how I view it, and my practice of spending time with it.</p> <p>When it comes to my clinical work with clients in therapy, today was my first day back at work, and I felt so much calmer, so much more patient, so much more open to people's experiences, and so much more in tune with their stories than before.</p> <p>I realised that the experience and findings of this research are very much transferable to my personal life and clinical practice.</p> <p>The challenge is that some people may not be as ready to open up to some ideas from this research, and it would be necessary to approach them gently with care. However, accepting others where they are, even at a very different place, and not forcing anything upon anyone feels very important. I hope this research's findings will reach those who are ready to receive its message.</p>

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I shared these thoughts and reflections with my research consultants. I would like to include a quote from one of my research consultants, Kari, in this part of my reflexive journal, as it deeply touched my heart. I also believe it speaks directly to how my research approach has been perceived by the experts by experience:

“You invited and experienced nature connection yourself as a researcher/ clinician/ human member of the natural world. The fact you did this says so much about you in terms of respecting the participants, yourself and the earth. It illustrates your willingness to integrate your personal lessons and insights from others (that originate from nature connection) into your process as a researcher. You allowed yourself to be further transformed by the participants, research process and the natural web that connects us all.”



06/05/2024  
 Reflecting on  
 Member  
 Reflections

I was really struck by the detailed responses from the participants sharing their feedback and reflections on the summary of results. It felt validating to hear that engaging in the research interviews felt meaningful to them and how much they value the topic of the study being investigated. I appreciated how carefully they approached the findings and the critical reflections they shared, which further shed light on this study. I was equally made aware of many ways in which this research, as well as the process of member reflections, could have been improved.

I felt guilty for not considering the language used in this research more carefully and for not accounting for the many ways people view and experience impairments or disability. At the same time, I questioned whether one term that fits all experiences even exists. Or would this return to another reductionist approach that fails to incorporate someone else? I wish I had these conversations with each of my study participants to know what works for them and this group of people, bearing in mind that it may not apply to other research groups.

I also felt guilty for not reserving enough time to set up a focus group where members could share their reflections—a forest of trees, so to speak, where we could gather to lean on each other's thoughts and experiences, fostering a sense of community even more and being more in line with the participatory research principles. I also wish I had reserved enough time to incorporate their feedback into the study analysis to account for all experiences.

Overall, I feel guilty for not being as inclusive as I could have been...

As Audre Lorde said, guilt “is a response to one’s own actions or lack of action. If it leads to change then it can be useful, since it is then no longer guilt but the beginning of knowledge.” Thus, I am approaching these reflections as learning, as a new knowledge that will help me guide my actions as a researcher and a clinician in the future.

## Appendix V: Member Reflections Feedback

### Member Reflections Feedback

Participant Pseudonym	Feedback and Reflections
Feather	<p>The sound of trees. This is a wonder as is their movement as well.</p> <p>How are the trees responding both movement and sound to the breezes or winds...</p> <p>How the leaves are decorative, moving and shimmering in the light. A source of life to many different insects, some from their cocoon stage. How they seem to talk to one another in the breeze and even become a chorus.</p> <p>To share perspectives with others, is also to open eyes to others in listening... community.</p> <p>Thank you for your review, Karolina. This summary that you provided is uplifting. Shaping and likening individuals and the community to trees is somehow reassuring. As a result, I look forward to even more to the next gathering and guidance.</p>
Lorraine	<p>Thank you for doing the research study. My comments are simply my feedback where I had a response to certain phrases or words. Whatever I initially shared in the interviews may be more fleshed out because of the summary and reflects where I am at right now. You mentioned that you would not change the summary due to time limitations at this point in the study but you could add comments. So these are my thoughts and reactions at this time. Overall, I feel the summary is accurate, and I've only focused on a few key phrases and words that stood out for me.</p> <p>[Anonymised paragraph]</p> <p>I find the word "self-esteem" problematic because I think we have different parts to ourselves and I esteem some parts of myself and denigrate other parts so "self-esteem" doesn't increase in all parts of the self equally. I feel like the term "self-esteem" is too simplistic a word for that. Since I think my "self" is made up of many parts; it is more about self-connection and self-acceptance than self-esteem.</p> <p>I feel that through forest-bathing, I experience more self-connection because I am connecting with the natural world and looking at my part in it and how it is part of me. There were parts of me that I wasn't aware of before forest-bathing because I wasn't as attuned to the natural world. For example, everyday, I first notice the sky outside my window. I really take it in because I am surrounded by buildings and the sky is the most accessible part of nature that I can see. The pain or discomfort I feel within my body (which is increasing as I get older) responds to the sky. I am aware of my own mood and physical sensations in my body and how taking in the sky impacts my response to my own body. Parts of me can be unhappy with the sky and not accept what I see especially on cold, grey days especially if feeling more pain in my body. Forest bathing helps me notice the places where I am not accepting of nature (the sky, the cold) because of the limits within my own body as I age. Forest bathing encourages more self-connection because when I take the time to accept the sky, the pain in my body is more manageable. So the parts of self that want to denigrate myself often because of pain and loss of ease of function in my body are often the same parts that are unhappy with the sky on grey, cold days--When I notice that process, then I can just accept the sky as it is and accept my pain as it is. I can accept why I am not motivated to get out and go for a walk or be active on such days. I think that is why I prefer the word self-connection or self-acceptance over the word self-esteem when I focus on my experience with the natural world.</p> <p>Under the sub-theme - Building reciprocal relationships with other people - I have noticed in the EcoWisdom group a deepening focus on inclusion. There has been a growing focus on intersectionality in the group that has emerged because of the participants within the group and with intention from the EcoWisdom guide inviting facilitators from diverse backgrounds to guide sessions. The inclusive focus when planning sessions and inviting many people to participate in sessions is really powerful.</p> <p>Under the sub-theme- Deepening connections with nature - you mention in the description that "over-all participants reported stronger effects from being in-person despite potential distractions." For me, It was really special when I could travel with an EcoWisdom team to BC a year ago. It did however require a lot of effort and planning to do so. I would add that there are geographical barriers to being in person that are overcome by the online meetings. I am</p>

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grateful that we can connect online because people from different parts of Canada and some from other parts of the world can participate together. I strongly agree that "online sessions are surprisingly powerful".

Karolina, I noticed there were no sub-themes for the theme - Giving Back.... The theme description for that section feels accurate to me. I was just curious why it did not generate sub-themes. For me there were 2 sub-themes: 1/ more sensitivity to Indigenous peoples caring for the earth and 2/ the Earth being our/my Home. When I think back to the interviews, I don't think I thought about this in response to the interview questions but it stood out strongly for me when I read the summary. I have been more aware of Indigenous people's care for the earth as a result of being more involved with Forest-bathing. It has come up in our community online gatherings as a few people have identified as Indigenous and certainly for me, more deeply after [person's name] spoke with the group. The forest bathing sessions and community gatherings have really stressed that caring for the earth is the responsibility of all of us. It has helped me be more sensitive to how Indigenous peoples have tried to protect the earth for such a long time. [Anonymised] This has come up through many of the EcoWisdom community gatherings and in all the forest bathing sessions there is acknowledgement of Indigenous peoples caring for the earth.

The 2nd sub-theme for me, is the earth as my Home. [Anonymised]. For me home is my family but as I become more engaged with forest-bathing, I become more aware of "Home" being the earth and all the natural world.

The research project will be very helpful to EcoWisdom and it was helpful for me to see the summary to further clarify my own experience.

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Michelle Thank you for your email. It has been a wonderful experience working with you. I think this research is really helpful in communicating to everyone, especially outside the disability community, what people with disabilities need and want. By using something in nature like a tree to describe connection and inclusion, there is a clear illustration of what is missing in culture and society.  
Cheers!

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Rowen I absolutely love your visual map! It is so perfect for the work we are all doing! The themes also align so well with my personal experiences.  
My initial reaction to seeing the visual map for your research was noticing the smile that formed on my face. How perfect, was my next thought. The image of the tree and the soft muted colours denoting the themes perfectly illustrated how forest bathing and my participation in the study felt: calm and grounded, supported, and rooted in the earth. Each theme resonated deeply with me. Reading the summary table:  
The Ground:  
Sense of belonging is really inaccessible to people with disabilities.  
Feeling held and accepted by nature and the forest bathing community.  
"This isolation fosters loneliness and a sense of disconnection from oneself."  
"The gentle invitations to forest bathing without the promise of change were well-received"  
These 2 sentences really spoke to me. I often feel disconnected from myself and others, but the gentleness and kindness, the flexibility to alter the invitations, and the assertion that we don't need to change, we are welcome exactly as we are, was just what I needed. If I was disconnected from my body that day it was ok, if I did the invitation and still felt disconnected, that was ok too. It didn't mean I was doing anything wrong. If one invitation shifted something for me or opened me, but another didn't, that was perfectly fine too. I was welcome to show up and participate however I could. And I was able to see how that was true for all of us. One invitation gave me such a sense of peace, but made another person feel filled with sadness. Both experiences were welcomed and treated as equally valuable.  
The Trunk:  
I was so pleased to see the sub-theme of embracing the authentic self. This has been such an important and unexpected outcome of forest bathing for me but I wasn't certain if others were experiencing similar outcomes. To know that we not only connected through the program but also now through this communal growth and acceptance of our true selves, makes me so happy.  
The Branches:  
Opening up to the world.

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Building reciprocal relationships with other people - this was so nice to see as an emerging sub-theme. I knew this to be true for myself, but wasn't sure if others felt the same. Hearing that nature was able to act as a bridge between individuals of varying abilities gives me so much hope for the future of forest bathing. [Anonymised]. Reading about this sub-theme in your research has further inspired me to bring together people of varying abilities. The idea of the forest acting as a bridge to bring together intellectually disabled people, seniors, new mothers into this deeper, reciprocal, possibly unexpected relationships, brings me so much joy!

"Practicing patience, accepting others as they are, and being secure within oneself were also noted as supporting connections" I loved this part! Again, I hope this is something that will come out of the work I plan to do. I've noticed that for myself and the people I support, if our communication is different, slower, or less clear, it can lead to us talking less, sharing less and sometimes showing up less...so reading that others were able to practice patience and learn to accept others as they are really inspires me to move forward with my own work and to dig a bit deeper into contemplative communication and listening so I can clearly share these tools with my forest bathing groups.

Spiritual awakening to the universal interconnectedness and appreciation of all forms of life This sub-theme resonated with me so deeply! Thank you!! Learning to see and understand the intrinsic value held by every part of nature, including ourselves is such a profound experience. Many wonderful people I know enjoy nature, but fail to think of it in any kind of deep meaningful way. In the same vein, they (myself included) can struggle to see their own deep value and worthiness in the world. I'm not at all surprised that forest bathing allowed people to develop this new way of seeing nature and themselves.

This was such a joy to read! Everything you wrote resonated deeply with me and in fact brought back visceral memories of participating in the forest bathing programs.

I am so grateful for your work and can't wait for the next stage!!

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Buttercup	<p>Very well done Karolina, I was happy to help &amp; I always learn something &amp; meet more like-minded kind folks.</p> <p>Thank you so much in choosing this topic &amp; the disabled participants' perspective we really all appreciate you.</p> <p>Good luck in the future &amp; always.</p>
Crystal	<p>Thank you for doing more research into the topic of the impact of forest bathing delivered in accessible, inclusive &amp; safe manners on people with a variety of disabilities and/or health challenges.</p> <p>I want to begin by saying that not all people with disabilities have health difficulties. It would be more accurate to say people with a variety of disabilities and/or health challenges.</p> <p>I would also like to stress how important on-line sessions are for people, who for a variety of reasons, cannot do in-person sessions.</p> <p>Again, thank you for your work on this topic.</p> <p>Thank you for the clarification.</p> <p>I think it would be helpful to include these clarifications/ explanations in the final copy.</p> <p>Have a great day!</p>

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