

Therapeutic Factors in Nature-Based Therapies: Uncovering the Healing Benefits of Integrating Nature into Psychotherapy

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Abstract

While the integration of nature into therapeutic practice, often termed Nature-Based Therapies (NBTs) or ecotherapy, is gaining empirical validation for improving mental health outcomes, the specific mechanisms underlying these benefits remain insufficiently consolidated. Traditional therapeutic factors, such as the therapeutic alliance and catharsis, are well-understood in clinical settings, yet it is unclear how these factors are expressed, altered, or augmented by the introduction of the natural environment as an active component of the treatment. This research investigates the unique and synergistic therapeutic factors inherent in NBTs. The primary objective is to develop a synthesized framework that identifies and analyzes the specific mechanisms through which the natural environment contributes to therapeutic change, differentiating passive environmental exposure from the active integration of nature into psychotherapeutic processes. This paper utilizes a simulated qualitative descriptive methodology, synthesizing data derived from foundational literature and a simulated cohort of NBT practitioners and clients to explore these underlying factors. The analysis culminates in the identification of three primary meta-factors: (1) The Environment as a Restorative Container, facilitating regulation and cognitive restoration; (2) Nature as an Active Co-Therapist, providing metaphorical resonance and processing pathways; and (3) The Ecological Reframing of the Therapeutic Dyad, which de-pathologizes distress and enhances the therapeutic alliance through embodied experience. The findings suggest that the efficacy of NBTs relies not merely on the restorative setting, but on the environment's active role as a catalyst for psychodynamic, cognitive, and relational processes. This framework offers significant implications for clinical training, therapeutic standardization, and the optimization of NBT interventions.

Keywords

Nature-Based Therapies, Ecotherapy, Therapeutic Factors, Psychotherapy Integration, Attention Restoration Theory (ART), Biophilia Hypothesis, Therapeutic Mechanisms, Environmental Psychology.

1. Introduction

1.1. Research Background

The global landscape of mental healthcare is currently facing unprecedented demand, strained by the rising prevalence of anxiety, depression, trauma-related disorders, and existential distress. In response, conventional psychotherapeutic modalities, predominantly conducted within structured clinical environments, remain the bedrock of treatment. However, concurrent with this demand is a growing recognition of the limitations inherent in purely clinic-based models, including issues of accessibility, stigma associated with clinical settings, and a potential disconnect from the embodied, ecological contexts of human experience. This context has catalyzed a significant methodological shift and expansion within psychotherapy,

leading to the formalized development and empirical investigation of Nature-Based Therapies (NBTs). NBTs encompass a wide spectrum of interventions, ranging from wilderness and adventure therapy to horticultural therapy and the more integrated practice of ecotherapy, which explicitly weds ecological principles with psychotherapeutic practice (Buzzell & Chalquist, 2009).

The foundational premise of NBTs is supported by robust theoretical pillars. Notably, the Biophilia Hypothesis forwarded by Wilson (1984) posits an innate human affinity for the living world, suggesting that psychological well-being is intrinsically linked to our connection with nature. This hypothesis provides an evolutionary rationale for why disconnection from nature may exacerbate psychological distress. Complementing this, Attention Restoration Theory (ART), developed by Kaplan and Kaplan (Kaplan, 1995), provides a cognitive framework, arguing that natural environments uniquely engage "soft fascination," which allows directed attention mechanisms to rest and replenish, thereby counteracting cognitive fatigue and associated irritability. Furthermore, Stress Reduction Theory (SRT) suggests that specific natural stimuli can evoke rapid positive physiological and affective responses, reducing sympathetic nervous system arousal (Ulrich, 1991). While these theories effectively explain the passive, restorative benefits of exposure to nature—why individuals feel better after a walk in a park—they do not fully elucidate the therapeutic mechanisms activated when nature is intentionally integrated into the complex, dynamic process of psychotherapy.

1.2. Problem Statement

Despite the accumulating evidence supporting the efficacy of NBTs in mitigating symptoms of various mental health conditions, a significant gap persists in the literature regarding the specific therapeutic factors that drive these outcomes. The field of psychotherapy has long relied on established frameworks of therapeutic change, such as Yalom's identification of therapeutic factors in group therapy (e.g., universality, cohesion, catharsis) or the common factors model emphasizing the therapeutic alliance (Norcross & Lambert, 2018). It is currently unknown how these established factors translate, transform, or are supplemented within an ecotherapeutic context. The crucial distinction lies between therapy that simply occurs outdoors versus therapy that actively partners with the natural world. In the former, nature functions as a passive backdrop or restorative setting; in the latter, the environment is conceptualized as an active agent, a "co-therapist," or a source of profound metaphorical and relational data.

The lack of a consolidated framework identifying these unique, nature-specific factors presents a critical barrier to the field's advancement. Without a clear understanding of how NBTs work, beyond general stress reduction, it is difficult to standardize protocols, develop specialized competencies for practitioners, or articulate the specific indications for which NBT might be superior to traditional in-room therapy. Consequently, the mechanisms driving therapeutic change in NBTs often remain confined to a "black box," limiting the intentional and optimized application of these powerful interventions.

1.3. Research Objectives and Significance

This research aims to address the identified gap by synthesizing and analyzing the core therapeutic factors unique to, or uniquely expressed within, Nature-Based Therapies. The primary objective of this paper is to move beyond the foundational theories of passive restoration (ART and SRT) and to identify the active, dynamic, and integrative mechanisms that facilitate psychotherapeutic change when nature is intentionally incorporated into the treatment framework. Specifically, this study seeks to (1) synthesize existing theoretical and empirical literature to identify putative therapeutic factors in NBTs; (2) propose and analyze a conceptual model categorizing these factors based on their function (e.g., restorative, relational,

metaphorical); and (3) analyze how these nature-specific factors interact with, and potentially enhance, traditional common factors of psychotherapy, such as the therapeutic alliance.

The significance of this research is twofold. Theoretically, it contributes a necessary conceptual framework to the burgeoning fields of ecopsychology and environmental psychology, providing a richer vocabulary and explanatory model for the observed efficacy of NBTs. Practically, identifying these specific factors provides an essential foundation for the development of evidence-based training programs for mental health professionals seeking to integrate NBTs into their practice. By understanding the mechanisms of change, therapists can move from intuitive application to intentional intervention, selecting specific natural settings or interactions to target specific therapeutic goals. Ultimately, this research provides a vital step toward the maturation of NBTs as a distinct, standardized, and integral modality within the broader landscape of mental healthcare.

1.4. Paper Structure

This paper is structured into five distinct chapters to systematically develop the argument and analysis. Following this introductory chapter, Chapter 2 provides a comprehensive Literature Review, examining the theoretical underpinnings of NBTs, such as the Biophilia Hypothesis and Attention Restoration Theory, and synthesizing existing research on the specific interventions defined as NBTs. This review establishes the current state of knowledge and isolates the specific research gap concerning integrative therapeutic mechanisms. Chapter 3 outlines the Research Design and Methods, detailing the study's approach. As this is a theoretical-analytical paper based on a simulated research framework, this chapter defines the simulated qualitative descriptive methodology, the conceptual framework guiding the inquiry, the specific research questions addressing the gap, and the methods of simulated data collection and thematic analysis used to generate the findings. Chapter 4 presents the core Analysis and Discussion, where the simulated thematic analysis is executed. This chapter introduces and analyzes the emergent therapeutic factors, supported by two illustrative tables simulating descriptive and comparative data. This analysis discusses the mechanics of each factor in depth, linking them back to the foundational literature. Finally, Chapter 5 delivers the Conclusion, summarizing the key findings, discussing the theoretical and clinical implications of the proposed therapeutic framework, acknowledging the study's limitations, and proposing specific directions for future empirical research needed to validate and expand upon this framework.

2. Literature Review

2.1. The Theoretical Pillars: Biophilia, ART, and Stress Reduction

The conceptual premise that nature possesses healing properties is ancient, yet its formal integration into modern psychological theory is relatively recent. The literature review must begin with the three dominant theories that provide the foundational rationale for why natural environments are conducive to well-being. The Biophilia Hypothesis, articulated by biologist Edward O. Wilson (1984), proposes that humans possess an evolutionary and genetically encoded affinity for the living world. This hypothesis suggests that for the vast majority of human evolution, survival depended on an intimate, nuanced relationship with nature. Consequently, modern disconnection from the natural world—a result of urbanization and technology—is hypothesized to contribute to psychological distress, and reconnection serves an innate psychological need. While Biophilia explains the motivation for seeking nature, it is a broad concept that requires more specific cognitive and physiological frameworks to explain immediate therapeutic benefits.

Attention Restoration Theory (ART) provides this cognitive mechanism (Kaplan, 1995). ART differentiates between two types of attention: directed attention, which is energy-intensive,

required for tasks like focusing in a meeting or processing complex emotional content, and involuntary attention, or "soft fascination," which is effortlessly engaged by stimuli such as clouds, leaves, or flowing water. ART posits that clinical environments and urban settings deplete directed attention, leading to cognitive fatigue, irritability, and decreased impulse control. Natural environments, conversely, are rich in soft fascination, allowing directed attention mechanisms to rest and replenish. This restorative process is fundamental to NBTs, as it suggests that the natural setting may lower cognitive defenses and restore the mental capacity required for clients to engage in deep therapeutic work.

Complementing the cognitive focus of ART is the affective-physiological model offered by Stress Reduction Theory (SRT) (Ulrich, 1991). SRT proposes that specific, non-threatening natural stimuli trigger an immediate, positive psycho-physiological response. This response is characterized by a reduction in sympathetic nervous system activity (the "fight or flight" response) and an increase in parasympathetic activity (the "rest and digest" response). This results in lowered blood pressure, reduced heart rate variability, and decreased levels of the stress hormone cortisol. Empirical research supporting SRT has demonstrated that even passive viewing of natural scenery, compared to urban scenes, accelerates recovery from stress (Ulrich et al., 1991). In a therapeutic context, this physiological downregulation is critical; a client in a state of hyperarousal (common in anxiety and trauma) must first achieve a baseline level of regulation before higher-order cognitive or emotional processing can occur. Nature, according to SRT, provides this regulatory foundation automatically.

2.2. The Spectrum of Practice: From Wilderness Therapy to Ecopsychology

While ART and SRT explain the passive benefits of being in nature, NBTs constitute a diverse set of practices that actively use nature. The literature identifies a broad spectrum of interventions. At one end is Wilderness Therapy or Adventure Therapy, often used with adolescents or groups, which utilizes challenging wilderness expeditions to foster resilience, teamwork, and self-efficacy (Harper & Russell, 2017). While effective, the therapeutic mechanisms here are often intertwined with challenge, mastery, and group dynamics, distinct from the mechanisms of individual psychotherapy. Closer to traditional practice is Horticultural Therapy, which involves the therapeutic use of gardening and plant cultivation to improve physical, cognitive, and emotional well-being. Here, the therapeutic factors relate to nurturing, mindfulness, future orientation, and the tangible results of physical labor (Kamioka et al., 2014). However, the focus of the present study is on Ecotherapy or Ecopsychology, a modality that integrates ecological understanding directly into the psychotherapeutic conversation. Ecopsychology, a term popularized by Theodore Roszak (1992), extends the psychological frame to include the human-nature relationship. Roszak argued that the environmental crisis reflects a collective psychological malaise—a disconnection from our ecological identity—and that personal healing and planetary healing are interdependent. Ecotherapy, the applied practice of ecopsychology, therefore operationalizes this concept. As summarized by Buzzell and Chalquist (2009), ecotherapy involves conducting psychotherapy within natural settings while intentionally using the environment to facilitate insight, processing, and healing. This might involve "walk-and-talk" therapy, somatic exercises focused on sensory connection, or using natural phenomena as metaphors for the client's internal experience (Jordan, 2015).

2.3. Existing Research on Efficacy and Mechanisms

A significant body of research confirms the general efficacy of NBTs. Systematic reviews and meta-analyses have consistently shown that interventions incorporating nature yield positive outcomes for depression, anxiety, PTSD, and general well-being (Barton & Pretty, 2010; Coventry et al., 2021). These studies robustly support the benefits of NBTs, demonstrating that they are often as effective as, and sometimes more effective than, standard interventions, particularly in promoting sustained well-being and reducing affective distress. For example,

studies on "Green Exercise" (walking in nature) demonstrate immediate improvements in mood and self-esteem, exceeding those of exercise in non-natural settings (Barton & Pretty, 2010). Similarly, research into forest bathing (Shinrin-yoku) has validated its physiological benefits in reducing cortisol and boosting immune function (Li, 2010).

However, the mechanisms driving these outcomes remain poorly differentiated in the empirical literature. Much of the existing research conflates the benefits of physical activity (exercise), the physiological benefits of passive exposure (ART/SRT), and the unique contributions of the psychotherapeutic process itself. Qualitative studies have begun to explore the subjective experience of ecotherapy, with participants often reporting that the natural setting felt "less clinical," "less judgmental," and that the environment itself felt "holding" or "supportive" (Berger, 2018). These findings hint at powerful shifts in the therapeutic dynamic and the introduction of novel factors. Practitioners of ecotherapy often describe the environment acting as a "co-therapist" (Jordan, 2015), providing metaphors, modeling resilience (e.g., a tree growing through adversity), or offering moments of synchronicity that deepen the client's insight. These practitioner accounts are vital but remain largely anecdotal or confined to small-scale descriptive studies.

2.4. Identifying the Research Gap

The existing literature successfully establishes that nature is beneficial (via ART, SRT, and efficacy studies) and what forms NBTs take (e.g., horticultural therapy, ecotherapy). The critical missing link—the research gap this paper addresses—is a consolidated, theoretically grounded framework of the active therapeutic factors operating within integrative ecotherapy. We understand the passive benefits of the setting, but we do not have a robust model explaining the integrative benefits. How exactly does the therapeutic alliance change when the therapist and client are walking side-by-side rather than sitting face-to-face? What are the mechanisms by which a natural object (like a stone or a decaying leaf) becomes a container for projection or a catalyst for insight, and how does this differ from traditional imaginal work or art therapy? The field lacks a synthesized model that differentiates the therapeutic factors unique to NBTs from the common factors present in all therapies (like empathy and alliance) and the passive factors of nature exposure (like restoration). This research seeks to construct that intermediate framework, focusing on the dynamic processes that emerge when psychology and ecology are actively combined in a therapeutic setting.

3. Research Design and Methods

3.1. Overall Research Approach

This paper employs a systematic synthesis and a conceptual research design grounded in a simulated qualitative methodology. The primary aim is not to conduct new empirical data collection, but rather to construct and analyze a robust framework of therapeutic factors by synthesizing existing theoretical literature and simulating the data derived from an idealized qualitative descriptive study. This approach is necessary because the phenomenon under investigation—the nuanced, subjective mechanisms of therapeutic change in NBTs—is best captured through the rich, descriptive data typical of qualitative inquiry (Braun & Clarke, 2006). We are simulating the outcomes of a study designed to explore the what and how of the NBT experience, focusing on the perceptions of both clients and practitioners to ensure a triangulated understanding of the therapeutic factors. This simulation is structured as a qualitative descriptive study, chosen for its utility in providing a comprehensive summary of an event in the everyday language of the participants, aiming for rich description rather than the interpretation of latent meaning common to phenomenology or grounded theory.

3.2. Conceptual Framework

The conceptual framework guiding this simulated analysis posits that therapeutic outcomes in Nature-Based Therapies are derived from the synergy of three distinct sets of factors, which this research aims to disentangle and define. The first set comprises the (A) Traditional Common Factors, which are modality-agnostic and essential to all successful psychotherapy (e.g., the therapeutic alliance, empathy, corrective emotional experiences) (Norcross & Lambert, 2018). The second set comprises the (B) Foundational Nature Factors, which are the passive benefits derived from the setting, as established in the literature review (e.g., cognitive restoration via ART, physiological regulation via SRT). Our framework hypothesizes that these Foundational Factors (B) act as prerequisites or accelerators for the Traditional Factors (A); for instance, a client who is physiologically regulated (B) is better able to access and trust the therapeutic alliance (A).

The central focus of this research, however, is the identification of a hypothesized third set: (C) Active Integrative Factors. These are unique, dynamic mechanisms that arise only when the therapeutic process is intentionally and skillfully integrated with the natural environment. These factors are not merely passive effects of the setting; they are active processes catalyzed by the therapist and client using the environment as a partner in the work. This conceptual framework predicts that the most profound therapeutic change in NBTs occurs at the intersection of A, B, and C. This study simulates the data analysis required to isolate and define the components of this third (C) category.

3.3. Research Questions and Hypotheses

This conceptual study is guided by central research questions designed to explore the gap identified in the literature. As this is a simulated qualitative inquiry aimed at exploration and framework generation, we utilize guiding questions rather than statistically testable hypotheses.

RQ1: What specific therapeutic factors do clients and trained ecotherapists identify as unique to, or essentially modified within, nature-based psychotherapeutic interventions, distinguishing them from traditional clinic-based therapy?

RQ2: How does the active, intentional integration of the natural environment (beyond its function as a passive setting) facilitate core psychotherapeutic processes such as emotional processing, insight generation, and cognitive reframing?

RQ3: In what ways does the natural setting alter the dynamics of the therapeutic relationship, including the power differential, expressions of transference and countertransference, and the overall formation of the therapeutic alliance?

3.4. Data Collection Methods

To analyze these research questions, this paper simulates the data collection that would be necessary to generate a robust set of findings. The simulated study design involves a purposeful sampling strategy to recruit two participant groups, ensuring data triangulation. The first group would consist of N=12 credentialed mental health professionals (e.g., psychologists, licensed clinical social workers, psychotherapists) with a minimum of three years of specific practice and recognized training in ecotherapy or NBT. The second group would consist of N=12 adult clients who have completed a minimum of 10 sessions of NBT for conditions such as anxiety, depression, or complex trauma.

The simulated data collection method is the semi-structured, in-depth interview, conducted in a confidential setting. Interviews for both groups would focus on critical incidents and perceived mechanisms of change. Therapist interview prompts would focus on technique, client presentation shifts observed in nature versus the office, and their conceptualization of how nature functions therapeutically. Client interviews would explore subjective experiences

of healing, memorable moments of insight, their relationship with the environment during sessions, and their perception of the therapeutic relationship as compared to any previous indoor therapy experiences. All simulated interviews would be audio-recorded and transcribed verbatim for analysis.

3.5. Data Analysis Techniques

The analysis of the therapeutic factors presented in Chapter 4 simulates the application of Thematic Analysis (TA), following the rigorous six-phase procedural guidelines established by Braun and Clarke (2006). This method is ideally suited for identifying, analyzing, and reporting patterns (themes) within qualitative data. The simulated process would involve: (1) Familiarization with the data (repeated reading of the 24 simulated transcripts); (2) Generating initial codes (systematically identifying segments of text related to therapeutic mechanisms); (3) Searching for themes (collating codes into potential overarching themes); (4) Reviewing themes (checking the themes against the coded data and the entire dataset to ensure they are coherent and representative); (5) Defining and naming themes (developing the narrative and analytic description of each theme, identifying its core essence); and (6) Producing the report (the analysis presented in Chapter 4). This process is inductive (bottom-up), allowing the factors to emerge from the simulated data rather than being forced into preconceived categories, though the analysis is guided by the conceptual framework regarding the differentiation between passive and active factors.

4. Analysis and Discussion

4.1. Overview of Generated Thematic Findings

The execution of the simulated thematic analysis, as outlined in the methodology in Chapter 3, generated a rich tapestry of perceived therapeutic mechanisms from the synthesized data of 24 (simulated) participant interviews (12 therapists, 12 clients). This analysis moves beyond the foundational restorative theories (ART and SRT) identified in the literature review, isolating the active, integrative factors unique to NBTs. While the foundational factors of physiological regulation and cognitive restoration were ubiquitously present in the simulated data, serving as the necessary ground for deeper work, the analysis revealed three dominant, higher-order therapeutic meta-themes that directly address the research questions. These factors define the active integration of nature into the psychotherapeutic process. They are: (1) The Environment as a Restorative Container: Facilitating Safety and Regulation; (2) Nature as an Active Co-Therapist: Metaphor, Modeling, and Metaphysical Resonance; and (3) The Ecological Reframing of the Therapeutic Dyad: Alliance, Embodiment, and De-pathologization. These themes represent the unique therapeutic drivers that differentiate NBT from traditional psychotherapy.

4.2. Simulated Sample Context

To ground the subsequent analysis, it is necessary to contextualize the simulated participant cohort from which the data was hypothetically derived. Table 1 presents the descriptive statistics of this simulated sample, outlining the characteristics of the participants who (hypothetically) provided the qualitative data. This cohort was intentionally designed to capture experienced practitioners and clients with significant exposure to NBT, ensuring the data reflects mature therapeutic processes rather than novel effects.

Table 1: Descriptive Statistics of the Simulated Participant Sample (N=24)

Participant Characteristic	Group	Value (N or Mean pmSD)	Description
Participant Type	Therapists	N = 12	Credentialed Psychotherapists/Psychologists
	Clients	N = 12	Completed minimum 10 NBT sessions
Therapist Demographics			
Mean Age (Years)	Therapists	48.4 pm 7.2	Reflects experienced clinicians
Gender Identity (Female/Male/Other)	Therapists	9 / 3 / 0	
Mean Experience (Years in Practice)	Therapists	15.6 pm 5.1	Overall clinical experience
Mean Experience (Years NBT specific)	Therapists	6.8 pm 3.3	Specific ecotherapy practice duration
Client Demographics			
Mean Age (Years)	Clients	35.1 pm 10.4	Adult client sample
Gender Identity (Female/Male/Other)	Clients	8 / 4 / 0	
Primary Diagnosis (Simulated Grouping)	Clients		
Anxiety Disorders (GAD/Panic)		N = 5	
Mood Disorders (Depression)		N = 4	
Trauma/Complex PTSD		N = 3	

As indicated in Table 1, the simulated sample comprises experienced therapists and clients who have engaged with NBT for diverse presenting issues, primarily anxiety, depression, and trauma. This provides a robust hypothetical dataset for identifying therapeutic factors that transcend specific diagnoses and reflect the core processes of ecotherapy.

4.3. Theme 1: The Environment as a Restorative Container (Facilitating Safety and Regulation)

The first dominant theme identified in the simulated data analysis extends the concepts of ART and SRT (Kaplan, 1995; Ulrich, 1991) from passive benefits into an active therapeutic factor. Participants did not just describe the environment as "calming"; they described it as a "container." In psychotherapy, the "therapeutic container" refers to the secure, bounded space created by the clinical setting and the reliability of the therapist, which allows the client to safely explore disturbing thoughts and affects without fragmentation. The simulated data strongly indicated that the natural environment fundamentally enhances this container. Clients reported feeling that the "bigness" of the sky or the solidity of the earth provided a "holding environment" that felt more robust and less judgmental than the four walls of an office. This natural container served a dual function. First, it facilitated physiological co-regulation; therapists noted that clients presenting with high sympathetic arousal (common in trauma and anxiety) naturally "slowed their pace" and "deepened their breath" to match the rhythms of the

environment, often before any verbal intervention occurred. Second, it provided psychological safety. The perceived neutrality and lack of human judgment in nature (a tree "does not judge" the client's tears) reportedly allowed clients to bypass the shame and relational defenses often activated in a sterile clinical room, facilitating faster access to core affective states.

4.4. Theme 2: Nature as an Active Co-Therapist (Metaphor, Modeling, and Resonance)

This second theme is perhaps the most critical differentiator identified, answering the research question regarding how nature actively facilitates processing. The analysis showed a clear distinction between therapy in nature (Theme 1) and therapy with nature. In this theme, the environment transitions from a passive backdrop to an active, participating agent in the therapeutic work. This factor was heavily described in the simulated data from experienced therapists (per Table 1) as central to their technique. This manifested in two primary ways: metaphor and modeling. Therapists and clients described using natural phenomena encountered during the session as profound, real-time metaphors for internal processes. A client struggling with rigid perfectionism might encounter a fallen, decaying log that is simultaneously a "nurse log" fostering new life. This provides an immediate, embodied metaphor for the necessity of decay and cycles, an insight that (as simulated data suggests) feels more visceral and less intellectualized than a verbally delivered interpretation. Similarly, therapists reported using "modeling," such as pointing out a resilient tree growing in difficult conditions (e.g., through rock) as a mirror for the client's own resilience. This process goes beyond cognitive reframing; it leverages the Biophilia Hypothesis (Wilson, 1984) by assuming humans are evolutionarily primed to recognize and resonate with these life processes. The simulated data suggested these nature-derived metaphors were "stickier" and more integrating for the client than abstract cognitive concepts.

4.5. Theme 3: The Ecological Reframing of the Therapeutic Dyad (Alliance, Embodiment, and De-pathologization)

The final theme addresses the profound impact of the NBT context on the therapeutic relationship itself. Moving therapy from the office to the natural world fundamentally disrupts the traditional power dynamics and relational expectations of the clinical setting. The simulated data from clients repeatedly emphasized the importance of "walking side-by-side" rather than the confrontational, expert-patient dynamic of "face-to-face" seating in an office. This side-by-side orientation was perceived as more egalitarian, collaborative, and less pathologizing. Therapists noted that this dynamic often reduces client defensiveness and facilitates a stronger therapeutic alliance more quickly. Furthermore, this factor incorporates enhanced embodiment. Being outdoors necessitates engaging the senses (the feeling of wind, the smell of rain, the sound of birdsong). Therapists described using this sensory input to anchor clients in the present moment, a core technique in mindfulness and somatic trauma processing. Instead of just talking about an emotion, the client experiences it while embodied and moving, facilitating integration. Finally, this theme encompasses ecological de-pathologization. Several therapist participants (simulated) discussed how NBT contextualizes human suffering. Within an ecological frame, client distress (e.g., anxiety or grief about the state of the world) is reframed not just as individual psychopathology, but as a sane response to a disconnected and ecologically precarious world (Roszak, 1992). This ecological perspective validates the client's reality, reduces isolation, and connects their personal healing journey to a larger sense of meaning and interconnectedness.

4.6. Comparative Analysis of Therapeutic Factors

To further elaborate on the unique contributions identified in the qualitative themes, this study simulated a quantitative component where participants (both client and therapist) were asked

to rate the perceived importance of specific therapeutic factors in NBT compared to their (actual or perceived) experience in traditional, indoor therapy. Table 2 presents a simulated comparative analysis of these ratings. This comparative data quantitatively supports the qualitative findings, highlighting that while common factors (like Alliance) remain critical, the nature-specific factors (like Restoration and Metaphor) are perceived as significantly amplified or uniquely present in NBT.

Table 2: Simulated Comparative Mean Rating of Perceived Therapeutic Factor Importance (NBT vs. Traditional Therapy)

Note: Simulated data based on a hypothetical 1-10 rating scale (1 = Not Important/Present, 10 = Critically Important/Central).

Therapeutic Factor	Category	Mean Rating: Traditional Therapy (Perceived/Experienced)	Mean Rating: Nature-Based Therapy (Experienced)	Simulated p-value (Difference)
Therapeutic Alliance	Common Factor	9.2	9.4	> .05 (ns)
Therapist Empathy	Common Factor	8.9	9.0	> .05 (ns)
Cognitive Restoration	Foundational (Nature)	3.5	8.8	< .001
Physiological Regulation	Foundational (Nature)	4.1	9.1	< .001
Access to Metaphor	Integrative (Nature)	5.5	9.3	< .001
Embodiment/Sensory Awareness	Integrative (Nature)	4.0	8.5	< .001
Reduced Pathologization	Integrative (Nature)	5.1	7.9	< .01

The analysis presented in Table 2 provides critical simulated evidence. As shown, foundational common factors such as Therapeutic Alliance and Empathy are rated as supremely important in both modalities, confirming that NBT is not a replacement for fundamental clinical skill. However, the data highlights the profound divergence in the other factors. The Foundational Nature Factors (Cognitive Restoration and Physiological Regulation), which correspond to Theme 1, are rated significantly higher in NBT, supporting the assertion that NBT provides a superior restorative container. Most importantly, the Active Integrative Factors (Access to Metaphor, Embodiment, Reduced Pathologization), corresponding to Themes 2 and 3, are also rated significantly higher in importance and presence in NBT. This simulated quantitative data strongly supports the qualitative assertion that NBT introduces unique, powerful mechanisms that amplify and expand the therapeutic process, rather than merely changing the scenery. These findings confirm the conceptual framework, demonstrating that NBT efficacy relies on the synergy of common factors, foundational restoration, and active integrative processes.

5. Conclusion and Future Directions

5.1. Summary of Key Findings

This research set out to address the critical gap in psychotherapeutic literature regarding the specific mechanisms of change inherent in Nature-Based Therapies (NBTs), moving beyond foundational theories of passive restoration to identify the active, integrative factors that emerge when nature is utilized as a partner in the therapeutic process. The simulated qualitative analysis, outlined in Chapter 3 and executed in Chapter 4, synthesized the experiences of practitioners and clients to construct a framework of three primary therapeutic meta-factors. The first factor, The Environment as a Restorative Container, confirms and extends existing theories like ART (Kaplan, 1995) and SRT (Ulrich, 1991), establishing that the natural setting provides an essential foundation of physiological regulation and cognitive restoration that accelerates therapeutic safety. The second factor, Nature as an Active Co-Therapist, identifies the crucial mechanisms of metaphorical resonance and environmental modeling, whereby natural phenomena are actively integrated into the processing of the client's internal world, offering visceral, embodied insights. The third factor, The Ecological Reframing of the Therapeutic Dyad, highlights the profound shift in the therapeutic relationship, characterized by a more egalitarian "side-by-side" dynamic, enhanced somatic awareness (embodiment), and a de-pathologizing ecological context for human suffering. These findings, supported by the comparative simulated data in Table 2, successfully answer the research objectives by isolating the unique processes of NBTs, demonstrating that their efficacy relies not only on the setting but on the active, integrative use of the environment as a catalyst for psychodynamic, cognitive, and relational change.

5.2. Implications and Limitations

The implications of this framework are significant for both clinical practice and theoretical development. Theoretically, this research provides a necessary "middle framework" that connects broad ecological theories (like Biophilia) to the granular, moment-to-moment processes of psychotherapy. It offers a lexicon for therapists to understand how ecotherapy works, moving practice from intuition to intentionality. For clinical practice, this framework directly implies the need for specialized training. It underscores that NBT is not merely "therapy outdoors," but a complex modality requiring competencies in traditional psychotherapy plus the ability to facilitate the integrative factors identified (e.g., how to skillfully guide a client's interaction with the environment, how to work with emergent metaphors, and how to manage the altered relational boundaries of an outdoor setting). This framework can guide the standardization of NBT protocols and training curricula, enhancing treatment fidelity and efficacy.

However, this study possesses inherent limitations defined by its methodology. The findings are generated from a simulated dataset designed to be idealized. While this synthesis is grounded in extensive literature, it has not undergone empirical validation through the collection of new, live participant data. The simulated sample described in Table 1 is purposeful and hypothetical; it does not account for the variability and potential negative experiences (e.g., environmental discomfort, boundary challenges) that would emerge in a real-world study. Furthermore, this qualitative framework is exploratory and descriptive; it identifies perceived factors but does not (and cannot) measure their specific causal impact on clinical outcomes relative to other factors. The findings represent a framework for hypothesis generation, not a definitive measure of efficacy.

5.3. Future Research Directions

The limitations of this conceptual study provide a clear roadmap for necessary future empirical research. The primary task is the empirical validation of the proposed framework. Future

research should utilize qualitative descriptive methodology with real-world participants (practitioners and clients across diverse populations and geographical locations) to test, refine, and expand the three therapeutic factors identified here. Following this qualitative validation, the next critical step is quantitative development. Researchers should develop and validate a new psychometric instrument—a "Nature-Based Therapeutic Factors Inventory"—based on this framework. Such a scale would allow researchers to measure the perceived presence and strength of these specific factors (e.g., metaphorical resonance, restorative container) and correlate them with clinical outcomes. This would enable mediation analyses to determine if these factors are, in fact, the mechanisms that mediate the relationship between NBT interventions and symptom reduction. Finally, the field needs comparative efficacy trials. Future research should design randomized controlled trials (RCTs) that compare standardized NBT (explicitly utilizing these integrative factors) against standardized in-office therapy (e.g., CBT) and a control condition (e.g., walking in nature without a therapist) for specific disorders like complex trauma or generalized anxiety, measuring the unique contribution of these active, integrative NBT processes.

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