

The role of nature connectedness in stress relief and transcendence

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Abstract

Ecotherapy research is abundant, but research on applied ecotherapy programs remains lacking. There is a need to understand their common factors and the theories/models supporting ecotherapy program benefits. This qualitative study explored participant experiences of a six-week ecotherapy program designed to reduce anxiety and stress through both anthropocentric and ecocentric ecotherapy practices. Using the Consensual Qualitative Research (CQR) method, five primary domains emerged: stress reduction, being present, shift in perspective, deepening relationship with nature, and transcendence. Findings add to the literature about common factors through which ecotherapy is therapeutic. Implications for theory and practice are discussed.

Keywords: ecotherapy, transcendence, stress reduction, ecocentric, nature connectedness

The role of nature connectedness in stress relief and transcendence

In today's frenzied, technology-driven self-help culture, some argue that the quest for authentic self-realization has become disconnected from a sense of meaningful belonging to some larger cosmic story that still makes demands on us (Berger, 1967; Taylor, 2007). The theory and practice of ecotherapy may not be quite cosmic, but it traces much of the ills of modern life to our hyper-individualistic estrangement from a larger ecological story (Roszak, 1992). Ecotherapists maintain that understanding people as part of an irreducibly interdependent and interconnected whole earth system (Buzzell & Chalquist, 2009) is vital to healing this suffering. Embedded within ecotherapy is an implicit humanistic invitation to grow beyond the anthropocentric and individualistic values that permeate much of conventional self-help culture and counseling.

The famous John Muir passage illustrates how nature is a mirror and/or doorway for self-discovery, "I only went out for a walk and finally concluded to stay out till sundown, for going out, I found, was really going in" (Wolfe, 1979, p. 439). By "going in," and re-membering the ecological self (Naess, 1995) that is interconnected and interdependent with nature, ecotherapists aim to heal the human and nature relationship. As such, the purpose of this study is to explore and understand how participants experienced a brief ecotherapy program that aimed to bring the nature-human connection into sharper view as part of the healing process.

Indigenous Roots of Ecotherapy

According to interviews with Indigenous Elders in Canada, the term '*nature*' does not exist in isolation within their worldview (Menzies et al., 2024). Instead, Indigenous ways of knowing emphasize a holistic understanding in which humans, land, and spirit are deeply

interconnected and engaged in reciprocal relationships. Caring for the land is not a matter of utility but of respect, responsibility, and reciprocity. Through this lens, the earth's offerings are understood not merely as resources for survival, but as sacred gifts that invite reflection, self-discovery, and relational accountability (Danto et al., 2022). Across many Indigenous cultures in North America, land-based knowledge and intergenerational teachings form the foundation of cultural continuity, identity, and ethical obligation. It is customary to treat the natural world as kin—alive, sentient, and deserving of care (Redvers, 2020).

Indigenous epistemologies are grounded in relationality, place-based knowledge, and the understanding that all beings exist in a web of mutual responsibility. Knowledge is not extracted or owned but emerges through lived experience, intergenerational storytelling, ceremony, and deep engagement with land and community. This way of knowing values intuition, emotion, spirituality, and observation as valid and interconnected sources of insight. Rather than positioning humans as separate from or above nature, Indigenous epistemologies frame humans as part of an animate world in which all life forms have agency and voice (Wilson, 2020; Styres, 2019). Robin Wall Kimmerer (2013) describes this as a “grammar of animacy,” where language itself reflects respect for the personhood of plants, animals, and the land, inviting a relationship rooted in reciprocity, gratitude, and care. Building on these perspectives, Daniel R. Wildcat (2023) introduces the concept of “Indigenuity,” emphasizing the application of Indigenous knowledge systems to contemporary challenges, advocating for a paradigm shift that recognizes the interconnectedness of all life and the importance of Indigenous wisdom in guiding sustainable practices. More recent scholarship emphasizes that reconnecting to Indigenous worldviews is not only vital for cultural resurgence but also offers essential perspectives for

ecological restoration, sustainability, and healing in the face of climate and mental health crises (Whyte, 2020).

Ecotherapy

Ecotherapy is rooted in indigenous and Ecopsychological principles—reciprocity, interconnection, biophilia—and encompass various nature-based practices, such as animal-assisted therapy, wilderness therapy, horticultural therapy, forest bathing, etc. (Clinebell, 1996; Jordan & Hinds, 2016). Core to ecotherapy is the idea that disconnection from the natural world contributes to psychological distress and reconnecting or strengthening one's connection to nature can facilitate healing (Buzzell & Chalquist, 2009). These benefits trace to biophilia, which understands humans as endowed with an innately evolved curiosity and longing to connect with nature (Wilson, 1986).

The benefits of ecotherapy have given rise to research investigating ecotherapy interventions and programs. For the purposes of this paper, this research might be conceptualized in two waves and targeting two levels. The first wave seeks to establish the basic premise that ecotherapy is conducive to holistic wellness. With mounting research having solidified that nature is curative, a second wave of meta-analysis, systematic, and scoping reviews (Grassini et al., 2022; Overbey et al., 2021; Pritchard et al., 2020; Reuff & Reese, 2023) have emerged to focus on identifying the common factors and theories that explain the benefits of ecotherapy. The levels come from Buzzell's (2016) framework of level one and level two ecotherapy approaches, which fall along a continuum of anthropocentric (level one) and ecocentric (level two) intentions. Ecotherapy often blends the levels, but the distinction remains useful for conceptualizing the range of psychological needs that support holistic health and development. The following two-

by-two framework helps to clarify our interest in exploring the levels and common factors/theories participants found most helpful for addressing anxiety and stress.

Table 1

Ecotherapy research waves and common factors/theories

	Wave 1: Benefits of ecotherapy	Wave 2: Common factors and theories
Level 1: Anthropocentric	Benefits of anthropocentric ecotherapy approaches	Common factors and theories of anthropocentric ecotherapy
Level 2: Ecocentric	Benefits of ecocentric ecotherapy approaches	Common factors and theories of ecocentric ecotherapy

Level One

Level one ecotherapy aims to “improve human mental and physical health” by spending time with nature (Buzzell, 2016, pp. 70). These approaches are anthropocentric meaning they are primarily focused on human healing and wellness. Two of the predominant theories undergirding level one ecotherapy are attentional restoration theory (Kaplan, 1995), which focuses on accessing nature to improve cognitive fatigue, and stress reduction theory (Ulrich et al., 1991), which focuses on accessing nature to promote recovery from stress. Examples of benefits derived from access to natural spaces and activities are improved physical well-being (van den Berg et al., 2015) and mental health/happiness (Davis & White, 2020), increased focus (Faber Taylor & Kuo, 2011), decreased anxiety (Martyn & Brymer, 2014), and reductions in cortisol (Smith & Jones, 2022). Studies have also found that ecotherapy enhances emotional regulation, bolsters resilience, improves self-esteem, and enhances empathy (Tillmann et al., 2018; Unruh & Hutchinson, 2011; Wang et al., 2024). One systematic analysis found ecotherapy as equally effective as CBT for depression (Reuff & Reese, 2023). The above studies provide a growing body of evidence that establishes the mental health benefits of first wave research related to level

one ecotherapy. Despite these benefits, level one ecotherapy remains limited to treating symptoms while ignoring larger systemic factors viewed as essential for human flourishing.

Level Two

Level two ecotherapy aims to cultivate a “Circle of Reciprocal Healing rooted in the ecologically based, whole systems understanding that there can be no true human health on a sick planet” (Buzzell, 2016, pp. 70–71). The ecocentric perspectives of level two view nature as inherently valuable and encourage growth beyond anthropocentrism by cultivating an ecological consciousness. Ecocentric values—reciprocity, interconnection, transcendence, gratitude—are seen as essential to healing and flourishing (Macy, 1991). Level two aims not just to change how we feel in nature, but the tendency to relate to nature as separate and inferior to humans. In level two thinking, humans are part of nature.

One theory that helps conceptualize the benefits of level two ecotherapy is place attachment theory (Altman & Low, 1992), which has evolved to focus on how place identity, natural bonding, and social bonding can be healing. Forming a reciprocal connection to nature can increase pro-environmental behaviors through empathy and nature relatedness (Chen et al., 2024). Another way to understand the benefits of level two is spirituality and transcendence (Naor & Mayseless, 2020; Reese & Myers, 2012). Though many counseling theories entertain the importance of transcendence, ecotherapy theory is one of the few that prescribes both a means and end to transcendence. By challenging the myth of separation—that humans are outside or above nature—ecotherapy explicitly links transcendence to nature by reminding us that humans are a part of a living planet (Buzzell & Chalquist, 2009). Transcendence “forges connections to the larger universe and provides meaning” (Peterson & Seligman, 2004, pp. 306–309) and when applied to nature engenders a sense of awe, oneness, and interconnection with

nature (Suganthi, 2019; Billet et al., 2023). Ecotherapy participants report a deeper sense of spiritual connection with the natural world (Delaney & Malinski, 2023; Delaney, Rian & Owenburg, 2022) and are more prone to pro-environmental behaviors (Anderson & Krettenauer, 2021).

One of the unique challenges of level two ecotherapy is that awakening to the life-giving qualities of connecting with nature frequently also means reckoning with painful feelings of eco-distress and eco-despair before finding one's way into constructive action (Edwards & Buzzell, 2009). Exposure to knowledge about climate change correlates significantly with climate anxiety, and knowledge alone of possible solutions do not tend to mitigate this anxiety (Ogunbode et al., 2024). Consequently, it is important to understand what happens when ecotherapy programs aim to cultivate level two ecocentric values. Practitioners focused principally on mental health benefits might wonder if level two ecotherapy might undermine mental health benefits, and be worth pursuing.

Ecotherapy Programs

The salubrious influence of nature highlights the importance of developing ecotherapy programs. Ecotherapy research is voluminous, but there is a dearth of research investigating ecotherapy programs in general. Those inclusive of ecocentric values of transcendence and reciprocity are very uncommon. Systematic reviews about ecotherapy programs for veterans with PTSD (Poulsen, 2017) have found wide variation in the kinds of ecotherapy applied (e.g.-animal assisted, horticulture, etc.). Others have targeted one specific intervention, such as nature walks, for depression and anxiety (Grassini, 2022). One comprehensive seven-week program for adolescents dealing with depression and anxiety included social and therapeutic horticulture, green exercise, nature and arts therapy, and psychoeducation as part of the “five ways to

wellbeing model,” but it was unclear the extent they included attention to ecocentric values, if at all (Wang et al., 2024). Those that have discussed transcendence, such as wilderness therapy models that immerse participants in “wild” nature contexts (Fredrickson & Anderson, 1999) are not realistic or accessible for many participants.

Wave two research is actively investigating common factors, but without much attention to the two ecotherapy levels. For instance, a qualitative meta-analysis of research describing group nature therapy for stress-related disorders found four broad analytical categories and 16 descriptive themes that provide hints about some of the common factors of ecotherapy: 1) instilling calm and joy, 2) needs being met, 3) gaining new insights, and 4) personal growth (Bergenheim et al., 2021). Several of the descriptive themes could resemble a level two ecotherapy focus—finding meaning and sense of belonging, being one with nature, developing new perspective—but there is no explicit reference to ecocentric type values, such as reciprocal healing, transcendence, or spiritual meaning-making.

Ecotherapy theory includes constructs related to transcendence and reciprocal connection, but it is unclear if these constructs are relevant or valued when it comes to coping with everyday stress and anxiety. What role do they play in regulating the nervous system? What do participants that undergo ecotherapy programs that target both levels experience as helpful? Calls exist for investigating the underlying factors, such as spirituality, of ecotherapy programs (Joschko et al, 2023).

Purpose of study

Embedded within ecotherapy is an implicit invitation to grow beyond the anthropocentric values that permeate much of conventional self-help culture and counseling. There is a need to understand how clients experience ecotherapy that aims to foster ecocentric values as part of the

healing process. Therefore, this study explored a) the experiences of participants in response to a brief six-week ecotherapy program designed to reduce stress and anxiety through exposure to ecocentric content and b) what participants found most helpful for ameliorating stress/anxiety.

Description of the program

This brief six-week ecotherapy program was delivered in ninety-minute modules and designed to address stress and anxiety. It took place in a large suburban park and the purpose was to empower individuals to effectively manage stress through exposure to ecotherapy practices with anthropocentric and ecocentric content. Each session was led by two licensed therapists, who facilitated activities and discussions. A group model was used to foster peer support and learning as well as community and collective healing. The program included guided ecotherapy mindfulness and relaxation sessions, acceptance and commitment therapy, forest bathing, therapeutic group conversations, and psychoeducational sessions.

The following represent a few of the specific activities. The sit spot exercise involves choosing a solitary location in nature to observe, reflect, and enhance attunement to nature. Level two components include developing an awareness of oneself as being a part of nature. The tree trust practice is an exercise where participants sit and engage in a reciprocal breathing relationship with a tree. Level two components involve sensing the interdependence of oxygen and Co₂, while feeling into the strength and grounding of the trees interconnected roots and whole system of interrelated organisms. The eastern philosophy inspired nature mandala exercise symbolizes wholeness and the cyclical nature of life. Creating a mandala out of natural materials is a creative meditative practice for sensing one's belonging to a cyclical story and transcending the mind's sense of being an isolated and separated individual. Additionally, psychoeducation sessions introduced participants to core principles of ecopsychology that frame their individual

experiences as part of a larger ecological web and broader cycles of nature and life. Through the above examples, ecocentric values of interconnection, reciprocity, and gratitude were emphasized throughout the program.

Method

Procedure and Participants

A qualitative design was developed to explore and understand participants in depth experiences of nature-based therapy. Approval was granted from the first author's Institutional Review Board. Adult participants were recruited from a private mental health practice in Maryland and informed of the potential risks and benefits, as well as their right to withdraw at any time. The screening questionnaire was administered via google forms. Eligibility criteria included mild to moderate levels of impairment related to anxiety (mean score = 5.5 on the OASIS (Norman et al., 2006), participation in the program, and the absence of acute or severe mental health conditions. The top reasons participants enrolled in the brief ecotherapy program were reducing anxiety and stress (6), self-care and grounding (3), connecting with nature (3), and exploring other ways of coping (2).

Several semi-structured questions were devised to explore the extent to which participants experienced new ways of thinking, feeling, coping, and connecting to nature during and after the NBSR program, including what they experienced as most helpful to anxiety reduction (See appendix). Nine total participants between the ages 29 to 71 were recruited. All were Caucasian, eight identified as female, one as male, and all identified as being from a middle to upper middle socioeconomic status. Four were currently working as mental health professionals, and five participants were current clients receiving counseling services. Interviews lasted an average of 40 minutes and were conducted over HIPAA compliant zoom software.

Researcher Positionality

The research team consisted of two counselor educators, one practicing counselor, and one graduate student. All identify as white, as middle socioeconomic status, have ease of access to nature and report high nature connectedness, thereby representing an insider perspective on the topic. All regularly participate in ecotherapy as part of their personal well-being and have experience in ecotherapy writing, research, and practice. Throughout the study, they reflected and discussed how their insider status could contribute to confirmation bias and/or an enriched empathic understanding of participant's experiences.

Data Analysis

The research approach of Consensual Qualitative Research (CQR) was applied because it is particularly useful for investigating internal responses to an intervention (Hill & Knox, 2021). The researchers used the inductive data analysis process of CQR as defined by Hill (2012), which included developing domains (main topics), integrating data into core ideas (essence of the domains), and conducting cross-analysis (categorizing common themes). Per CQR procedures, the researchers followed a process of individually reviewing and coding the interviews, and then met several times to collaboratively cross analyze the core ideas emerging from the data, until reaching consensus on emerging domains. To obtain the initial domains, the researchers reviewed the transcripts and coded themes that naturally emerged (Hill, 2012). Team meetings focused on hashing out a shared understanding of the illustrated core idea of each domain and then worked together to refine each category. As with the initial domain creation, the researchers processed the information with open discussion. A frequency table was created, identifying general (total participants minus 1 = 8-9), typical (at least half = 4-7), and variant categories (at least three, but less than half = 1-3) (Hill, 2012). The team worked together to

discuss their assumptions and biases in relation to the data to help ensure its accurate representation.

Trustworthiness

The team worked to ensure trustworthiness by ensuring consistency with the semi-structured interview process, which was completed by the first author, and by valuing the consensus process of data analysis in theme construction (Balkin & Kleist, 2017; Hill, 2012). After the second and third authors completed the initial round of coding, the first and fourth authors were brought on to perform a cross-analysis of de-identified data and domains. Through extensive discussion, the authors revised domains and subdomains. This took several iterations until the team was satisfied with the final domains and subdomains. Trustworthiness also included reflexivity practices of journaling and memoing about assumptions and hunches throughout the research design, interviews, and coding, which enhanced credibility. Member checking was not pursued due to several year gap between the initial interviews and coding process, but reflexivity practices and thick description of the research process help to demonstrate confirmability. The consensual coding process between the four authors bolstered dependability.

Findings

Findings included five main domains, three of which had subdomains—found in parenthesis: stress reduction, being present, shift in perspective (seeing nature as resource), deepening relationship (connection and restoration), and transcendence (awe). The domains primarily represent participant experiences of the brief six-week ecotherapy program as that was the focus of the questions.

Table 2

Summary of domains and subdomains from participant interviews

Domains, categories, and subcategories	Illustrative core idea	Frequency
1. Stress Reduction	1. Awareness of stress reduction and reduction in reactivity.	1. General
2. Being Present	2. Being pulled into the present moment in nature.	2. General
3. Shift in Perspective	3. Becoming more aware of the natural world and how nature can expand perspectives.	3. General
a. Seeing nature as a resource	a. The shift of increased interest in going to nature as a resource for wellness.	a. Typical
4. Deepening Relationship with Nature	4. Deepened connection to the natural world.	4. General
a. Connection	a. Regular connection with nature promoting mental health and fostering resilience.	a. Typical
b. Restoration & Enrichment	b. Self-report of feeling energized, free, restored, refreshed, delight, and happy.	b. General
5. Transcendence	5. Accessing a deeper sense of connection with the natural world that transcends habitual everyday awareness.	5. General
a. Sense of Awe	a. Experiencing the beauty and wonder of nature.	a. Typical
General – 8-9 cases, Typical – 4-7 cases, Variant – 1-3 cases		

Stress Reduction

Given that stress and anxiety were key selection criteria for participation in the ecotherapy program, the theme of stress reduction was anticipated. When exploring participant's hopes for the program it was clear less anxiety and stress was a priority given the ways participants described it, "I have trouble, just like getting started on something. I don't know where to begin... I'll feel like panicky...tense I guess, like upper body like shoulders and just like staticky in my head (Riley)."

Overall, the nature therapy program acted as a form of stress reduction translating into the awareness that being outside in nature reduces reactivity. Having explored other options, Lida preferred nature for its "direct natural way to deal with stress and anxiety...for me, the thing to do is to step outside and look around, take a breath." Participants stated that the program

allowed them to gain more tools for regulation and reduction in stress symptoms. Ashley noted “I think that my experiences in nature now, if I’m really in nature, just being in nature calms me down.” Alex noted being in nature makes them “less reactive, more peaceful, grounded, relaxed,” Emily stated, “nature can be another way to alleviate stress,” and Nicole reflected, “I can feel that just in my whole body, that it’s calming as long as I’m experiencing it.” In Cameron’s case, realizing that nature “gives me the skills to sort of pause and step back a little bit,” was also beneficial interpersonally, “So I guess the reactivity is pretty huge to me...sort of that drive to help or fix something for someone, when in fact it may be the most beneficial if I can just be present for them.”

Being Present

All participants noted that being pulled into the present moment by nature and learning to be present is beneficial. Many reported that nature’s way of engaging their senses helped with being present. For instance, Riley recounted how “focusing on the different sensory details. Definitely, you know, eases my mind...if I’m feeling stressed, once I’m outside...I pay attention to what I’m seeing and hearing and smelling.” Participants noted that now they are more intentional about being mindful when in natural spaces. For example, Emily noted

I mean, I would go out in nature, but I wouldn’t really pay that much attention to nature.

Now when I go out in nature, I look at it differently whereas I look at the things around me...I find that it helps bring me back to the present moment more than if I’m inside my house or a building... So, when you get out in nature everything around you is alive.

There's things always changing or to watch. Then you can pay attention to all those different things happening around you which keeps you in the present moment.

Noah stated that being in nature allowed her the capacity to go deeper into a meditative or mindful state, stating,

In nature, being connected to the present is much much easier than spending a lot of time sort of sitting inside trying to meditate. So, it's sort of a meditation without, kind of in a natural direct way. It's not really meditation, but it's, you know, present moment awareness that you can experience in nature quite easily. But it's hard to do it otherwise.

All participants consistently linked being present with a more granular open awareness, speaking about the sights, sounds, and smells of nature, as Noah does here,

...in nature I'm more aware of the details of things...this morning I was looking at these old cedar trees, several hundred years old covered with, um, ivy, and so I was looking, noticing the very very intricate pattern of the ivy branches on the tree, or, you know, the way that stone is feeling in my hand...or the reflections of light on water.

Shift in Perspective

Many participants noted that COVID necessitated working from home more often and feeling the effects of an indoor and sedentary routine. In this domain, shift in perspective, they described becoming more aware of the natural world and how nature expanded their perspectives. Cameron noted how nature moved “a little more in the forefront of my mind. It sort of rounds out a wider dimension to my thinking.” Even when immersed in her computer work, “there is still this sense that there's something greater around me.” Jordan reflected on one such experienced that epitomized her expanded awareness,

...we all had to lay down and look up at the sky...It was like there was so much more than what I see or what I am paying attention to around me...there is so much more to what I am experiencing.

The flavors of this expanded awareness included the comfort and steadiness of nature's rhythms, of knowing nature is "always available," and being reminded of a "wider perspective" beyond the human drama. Participants noted how aspects of nature helped them "trust the process" of change and find meaning in it: "the trees lose their leaves and like sometimes you have to let things go, like, to stay healthy (Riley)." For Ashley, the benefits of the shift were targeted specifically to emotion regulation,

...when I'm in a state of anxiety or fear, it's that sense of everything's going to be OK...even though it's kind of a crazy chaotic world outside, you know, that you can kind of look to the trees in your neighborhood or backyard or whatever, even the animals. We have deer—a mom and twin babies. Watching them and it's like, there's a stability there, there's a knowing.

Noah spoke of this in more general terms, "I understand it much more clearly now...why being inside buildings all the time just causes a person to be so stressed out...and how detrimental it is to not get outside often." Participants learned ways to shift their mood or perspective in the moment by turning to the natural world.

Seeing Nature as a Resource

The subdomain, seeing nature as a resource, highlights the shift of increased interest in going to nature as a resource for wellness. As such, these shifts were not just cognitive, but behavioral. About her "really positive experience" with nature, Jordan stated,

it helped me kind of realize that there is something so easily accessible that all I have to do is tap into it. So, I think that was, you know...a reminder. Stop and smell the roses.

There's that cliché. And I didn't realize how much I wasn't doing that. So, this kind of opened my eyes again to those simple things and making it a part of your day.

Several participants noted creating consistent rituals and/or dedicated times for rejuvenation and connection with nature. Riley also noted that when she is home and goes for a walk, she takes the time to drive to get to the forest, something she wasn't doing prior to the program. Quite explicitly, Anne stated,

I'm carving out time for nature and for my mental health and I've definitely noticed the benefits...even having one of two days a week where I just sit outside for an hour and then when I wasn't as consistent, I noticed the anxiety really coming back.

Because participants had now experienced nature "as an antidote to stress and anxiety (Noah)," they expressed more intentionality about "taking advantage of these ecotherapy tools that I kind of wasn't (Jordan)," and "taking my problems to nature to change my relationship with them (Alex)."

Deepening Relationship with Nature

This domain explores the range of deepening connections participants formed with the natural world. For Emily, this began with a new way of relating to nature, "I never thought about you know that you can even create a relationship with nature. Never thought about it from that perspective and I found myself spending more time in nature." Elaborating in a specific example, she said, "I am going to learn how to take good care of these plants because...there's something about the green in the house, taking care of it, tending to it...there is more of a living presence in the home." Anne stated, "I have a desire to give back to nature more. I guess it's gratitude. Nature provides. I think a lot about what, 'did you give to nature, what did you receive,'...so I give to nature." Likewise, Nicole also expressed feeling "gratitude" because "nature gives more

to me than I give to it” and therefore, “I do feel I am intentional about caring for it and taking time to appreciate it.” In some cases, as it was for Cameron, this newfound connection, “was a little surprising... I thought of nature in terms as interdependency. Umm, but not so much as in a like personal relationship...that idea of a give and take from a kindred spirit perspective. We need to take care of our planet and natural world.” She continued, “I think it stills feels a little odd for me, but umm, I feel a little more open to the possibility of that.” Participants reflected how deepening their relationship with nature was characterized by a reciprocal exchange of giving and receiving.

Connection

The subdomain, connection, reveals how regularly connecting with nature promotes mental health and fosters resilience, thereby illustrating the therapeutic potential of natural environments in contemporary ecotherapy practices. Anne reflected on the “stillness” she finds in nature, “It gives me the ability to like connect and slow down... it’s hard to tell what’s really real with my anxiety. It’s just like fear based....it helps me connect with what’s real and what matters.”

Participants noted that the program created an opportunity to connect around a shared set of values and identity related to love and appreciation for nature. For example, Noah noted, “I just think that everybody was all in a sense on the same page in connecting .. through our interest in or love of nature ...just a lovely thing to be coming together around.” Ashley stated,

I have spent a lot of time in nature and just love it so I was excited to come and excited that it was connected to teachers and counselors, just to be in the group with other teachers and counselors was really nice.

Importantly, it should also be noted that deepening connections could also be painful, such as it was for Emily when noticed the destruction of nature, "...it upsets me more now. You know, because I never liked seeing it, but I'm more like aware of it now."

Restoration and Enrichment

Words like energizing, freeing, restoring, refreshing, delightful, and happy were common in this subdomain. As Nicole put it, "it nourishes my soul... I do believe it stays with me to a degree, sometimes...I feel that dose of nature will help me cope depending on the circumstances I'm experiencing." Alex poignantly expressed the distinction between stress reduction and feeling restored/enriched,

Nature is a way of coming home and that allows for unburdening and recharging. Home is a place of belonging and connection. It's different from other forms of coping, such as distraction because it's tuning into the life all around, rather than tuning out through eating or using the phone.

Throughout the domain of deepening relationship with nature, multiple participants spoke of feeling "gratitude" for all nature offered, "getting more than I give," "giving back," and "honoring" a "personal" or a "kindred spirit" type connection. In this sense, where stress reduction pointed to the absence of something harmful, restoration emphasized something beneficial.

Transcendence

The domain of Transcendence expressed experiences where participants accessed a deeper sense of connection to nature as something greater. As Cameron reflected, "You know, I think there are moments that we're given that we get to, you know, be reminded on a very deep

level of a greater relationship outside of ourselves and our day-to-day world.” Participants, such as Nicole, used theistic language to describe the transcendence,

I just think there is a greater God and divine presence working in and through all those things. I think a sense of gratitude for my life. A sense of, there’s like an interconnectedness and it reminds that all things are working together. I feel like I can really relate to that deeper divine presence that is within me when I am in nature.

Others, such as Jordan were more nontheistic in their experiences of transcendence,

You know that there is something greater or like a master design. You just see the leaves or something growing and you’re like, there’s some serious engineering or science. Something’s out there because that can’t just happen...I can’t help but pay attention because it’s so amazing.

Activated by encounters with nature, these experiences often evoke feelings of wonder, reverence, and interconnectedness. Transcendent experiences have the power to expand our perception of reality and imbue life with a deeper meaning and purpose that something’s “out there” and “working together.”

Sense of awe

The subdomain, sense of awe, comes from moments of experiencing the beauty and wonder of nature. Often, this includes a sudden recognition of one's smallness in the vast and mysterious existence. For example, Cameron noted:

I think there were two times. The one was our sit spot, where I was under a huge, beautiful tree, and just the sun setting and brilliant colors around the sky. And—actually I would say there’s three—and then the other time was um, we did a meditation and sort of this kind of looking up at the clouds above, during this meditation of sorts and sort of

watching them float by and that um, you know sense of how, how small we are, a part of this huge, wide, amazing creation.

Marveling at the everyday fact of the “magical” sunrise and sunset, Emily shared, “It’s always different but it happens, it comes back. It’s just the repetition every day and just how important like, you know, the dark is and, how the sunlight is, and how it works altogether is amazing.” In the domain of transcendence and awe, participants noted a sense of belonging to “something that is bigger than me,” that is “working together,” that is “a greater process, a living process,” that is “holy and healing.”

Discussion

The domains of the CQR analysis support the growing body of literature showing the mental health and wellness benefits of ecotherapy programs (Grassini, 2022; Poulsen, 2017; Sahlin et al., 2012). In the domains, participants spoke about the benefits of having more awareness of how nature can help them shift their perspective, ground in the present moment, and access a deeper sense of connection and belonging as part of a something greater, all of which helped with regulation and reductions in stress and anxiety. We now turn to discuss how the findings address our two primary questions about the common factors experienced and what participants found most helpful for stress/anxiety.

Level One and Level Two Ecotherapy Factors and Theories

The table below represents the emergent domains plugged into the two-by-two ecotherapy levels, waves and common factors/theories framework. The domains indicate that participants experienced both anthropocentric and ecocentric related benefits and common factors.

Table 3

Ecotherapy research waves and common factors/theories

	Wave 1: Benefits of ecotherapy	Wave 2: Common factors and theories
Level 1: Anthropocentric themes	Stress reduction, being present, shift in perspective (nature as resource)	Stress reduction theory (stress reduction), Attention Restoration theory (being present, shift in perspective)
Level 2: Ecocentric themes	Deepened relationship with nature (connection), transcendence (awe)	Place attachment theory (deepened relationship), Ecopsychology theory (transcendence and awe)

Regarding the anthropocentric domains, participant's experienced stress reduction, being present, and a shift in perspective. These correspond with other ecotherapy research findings, such as present moment-to-moment awareness (Sahlin et al., 2012), sensory access to nature (Reese & Myers, 2012), and adjusting to nature's slower restorative pace (Bergenheim et al., 2021). The anthropocentric domains and common factors are consistent with stress reduction theory and attention restoration theory. Attention restoration theory explains the domains of being present and shift in perspective as related to nature's capacity to reduce rumination by directing attention to nature as a positive distraction (Jiang et al., 2019). Likewise, enjoying a "soft fascination" of nature stimuli frees up mental space for processing (Basu et al., 2019). In addition, these two domains link to the domain of stress reduction and stress reduction theory by activating a physiological "rest and digest" response associated with reduced cortisol and improved heartrate variability (Yao et al., 2021).

Turning to level two, the domains of deepened relationship with nature and transcendence, including their subthemes of connection and awe, were most directly related to the ecocentric values participants experienced as linked to reducing stress/anxiety. Although the program content did not explicitly delve into the distressing effects of climate change,

participants did not seem to experience the level two domains as interfering with the benefits of the other level one domains. It is possible that the sense of transcendent meaning, connection, and gratitude made available through an ecocentric focus may even lessen, rather than exacerbate climate anxiety (Dillman-Hasso, 2021). Findings suggest that a transcendent connection to nature may be accessed through suburban parks and does not necessarily require extensive wilderness immersion (Fredrickson & Andersen, 1999).

The domains of deepened relationship with nature and transcendence may represent common level two factors of ecotherapy. This aligns with existing studies, which found increases in nature connectedness—mediated by perceived restoration—to predict lowered anxiety (Guo et al., 2025). Participants undergoing an ecotherapy program for psychosomatic problems reported “soul improvement,” at the “soul level,” suggesting a deep or spiritual connection (Joschko et al., 2023), which tracks with Jung’s sense of nature as “...the nourishing soil of the soul” (as cited in Sabini, 2002, p. 90). Participant Nicole offered a similar sentiment, saying nature “nourishes my soul,” which aligns with other studies linking connectedness to nature, ecospirituality, and moral concern for nature (Billet et al., 2025). Studies of ecotherapy practitioners and clients found themes similar to our domains of deepening relationship with nature and transcendence, such as interconnectedness (Cooley et al., 2020) expansiveness, interconnectedness, and belonging (Naor & Mayseless, 2021), and co-becoming with nature (Lenehan & Watson, 2024).

Calls to further explore transcendence as a mediating factor between nature connection and personal growth (Pritchard et al., 2020) could help clarify the role of these two domains in developing an ecological consciousness. Both our findings, and other studies, seem to comport with quantitative studies showing exposure to nature is not only linked to self-transcendence, (Bethelmy & Corraliza, 2019; but self-transcendence mediates the relationship between nature

and prosocial behaviors (Billet et al., 2025; Castelo et al., 2021). Experiences of immanent transcendence in nature have been found to be a core factor in qualitative studies of how a spiritual or sacred connection to nature develops (Deal & Magyar-Russell, 2018; 2022). Likewise, they contribute to reconstructing a more ecocentric identity and moral values, even to the extent of risking arrest for environmental civil disobedience (Deal & O’Grady, 2020). A self-transcending connection to nature has also been shown to help individuals cope with existential concepts such as finding a purpose or being a part of something greater (Naor & Mayseless, 2020). Ample support exists for deepening relationship with nature and transcendence, with subdomains connection and awe, respectively, as common level two factors.

Though level one ecotherapy benefits are well-accounted for by stress reduction and attention restoration theories, the specific theories and models that account for the benefits associated with level two ecotherapy are less clear. This is ironic given that many of the constructs—ecological self, connectedness to nature, ecospirituality, environmental identity—found in the ecopsychology research lean in the direction of cultivating a reciprocal relationship to nature as an inherently valuable greater good worth preserving (Billet et al., 2023; Naor & Mayseless, 2020; Reese & Myers, 2012). The relative absence of transcendence and other ecocentric values in applied ecotherapy programs remains somewhat perplexing.

Returning to the domains, place attachment theory accounts for the nature and social bonding seen in the deepening relationship with nature domain and subdomain of connection, but what of transcendence? The related construct of place spirituality (Counted et al., 2023)—accessing a sense of a larger sacred reality through connections to nature—may be relevant as it has been applied to explain how NYC parks contribute to meeting spiritual needs and meanings (Svendsen et al., 2016). Given that secure attachments can be “safe havens” for co-regulation

(Bowlby, 1969), it seems probable that a deepening connection to nature, especially if imbued with transcendent meaning, could effectively reduce stress and anxiety. The empirically developed EcoWellness model (Reese & Myers, 2012) identifies spirituality and transcendence as essential dimensions of nature's healing. Humanistic theory also certainly accounts for transcendence, which was the whole point of self-actualization for Maslow (Koltko-Rivera, 2006), who described it as, "...the very highest and most inclusive or holistic levels of human consciousness, behaving and relating, as ends rather than means, to oneself, to significant others, to human beings in general, to other species, to nature, and to the cosmos." (1971, p. 269).

In sum, when it comes to level two common factors and theories, ecotherapy meets a conundrum; how much does it attempt to validate itself through mainstream psychology theory—much of which is inherently anthropocentric—and how much to look to the roots of its theoretical parent, ecopsychology—which is itself a mosaic of depth psychology, existentialism, phenomenology, transpersonal psychology, systems theory, and indigenous wisdom. In modernity's disenchanted framework (Weber, 1946), where nature has been emptied of sacredness (Tacey, 2000), translating the philosophical meanings of an ecological story into operationalized constructs and models is inherently difficult. Ample theoretical richness exists, but more work is needed to develop models that explain and validate how healing occurs through ecotherapy programs.

With regard to our second primary question, analyzing the domains can provide preliminary hints about how the factors across the levels might work together to make ecotherapy healing. The domains participants identified as most therapeutic for their stress/anxiety were being present (9 of 9) and transcendence (7 of 9), which suggests an interplay of common factors. Notably, transcendence was part of this interplay for all but two participants.

Though transcendence and being present are both mentioned by Cameron, the interplay is less obvious,

I would say the greater perspective that it brings um, is probably the most significant impact. That and using it as a sort of an easy way to tune into something beyond myself, to become more present. So, like the sounds, the smells, the senses that come from being outside.

For Emily, nature's sentience is a doorway to being present of sensing its profundity,

So, when you get out in nature everything around you is alive. They're things always kinda changing or to watch. Then you can kind a pay attention to all those different things happening around you which keeps you in the present moment. It's also something with the sounds. The way it sounds with the wind. So many sounds in nature, which is so, you know, healing and peaceful...the sound of the water, the sound of the insects. I found that pretty profound.

For Ashley, the interplay was slightly more obvious and spiritual,

That's really tricky because I'd actually say being in nature, whether being at the beach listening to the waves—that's the real piece of it—walking in the woods and seeing the leaves; that often makes me really calm...I think that I have this sense of nature as like this higher power kind of thing and, you know, that allows for this sense of trust and I think it enhances my experiences in nature because... It's so much more enhanced because I do have that, I feel like I have that sense of nature as a healing place.

Nicole also noted an explicit interplay of spiritual presence coming through attuning to nature,

I think they kind of go hand in hand. I think, because I feel a sense of divine presence permeating...just sitting and taking it in and being mindful intentionally of it. In those

moments, it's experiencing very mindfully, that divine presence, which I think then creates that sense of restoration and peace and calm...settles the nervous system, settles the mind, restores the soul.

It was similar, though slightly reversed for Jordan, with transcendent awe supporting presence, I think the sense of immediacy and mindfulness is probably the most where I say I really can get out of my own cycle of thought or the monkey mind. So that, that's definitely really strong. And a sense of like, the majesty and incredible! You know that there is something greater or like a master design...a sense of it all and divine presence enforced mindfulness...So, I'd say there's two things.

Throughout the quotes, the level one common factor of being present seems to enhance and/or be enhanced by a level two transcendent connection to nature that adds an element of trust and healing.

The domains and quotes above offer fodder for hypothesizing about the possible relationships between the common factors—across the two levels—contributing to how ecotherapy programs are therapeutic, such as transcendence enhancing healing or being present being enriched by a deepening relationship. In this way, participant experiences track with Clinebell's (1996) dynamic three-part Ecological Circle, which explains that when we are 1) nurtured by nature (e.g.-stress reduction, being present, shift in perspective) and 2) able to open to a self-transcending reality immanent in nature (e.g.-deepened relationship with nature, connection, transcendence, and awe), the restoration experienced may foster an enlightened self-interest to 3) “nurture nature” (connection) and give back. Findings also track with factors of the EcoWellness model (Reese et al., 2015): being present (physical and sensory access), shift in perspective (protection), deepening relationship with nature (connection, community

connectedness, preservation), and transcendence (spirituality). Both models track with participants sense that the factors function synergistically, with factors from both levels seeming to contribute to psychological regulation and a reciprocal relationship. If ecotherapy programs had to prioritize one unifying factor, our findings in conjunction with the insights of the Ecological Circle and factor analysis of EcoWellness (Reese et al., 2015), seem to suggest that cultivating deep and spiritually meaningful connections with nature, both individually and communally, may be worth considering. Evidence is growing for the bedrock ecotherapy assumption that re-membering animus mundi—the enchanting well-spring of numinosity and spirit intrinsic to nature—is healing for the modern psyche (de Diego et al., 2024).

Implications

Important implications for research and practice may be drawn from this study. First, this is the first study of its kind to explore an ecotherapy program through the lens of the two ecotherapy levels. Although the aims were exploratory, rather than predictive or causal, it highlights the kinds of experiences participants may find beneficial in a brief ecotherapy program. The domains corroborate existing studies that highlight holistic benefits of ecotherapy for clients reporting stress and anxiety. In concert with other models, such as the Ecological Circle and EcoWellness, ecotherapy practitioners might view the five domains as common factors around which to build their specific curriculum.

Second, the continued exploration of how and when to incorporate ecotherapy programs in conventional mental health treatment is needed. Despite its potential, nature is often underutilized as a healing space. Structured, step-by-step ecotherapy programs provide a framework for integrating nature into therapeutic interventions, ensuring consistency and efficacy in treatment delivery. Additionally, recognizing nature as a place of healing not only

benefits clients but also offers relaxation and rejuvenation for mental health professionals, potentially reducing burnout and improving job satisfaction. Understanding and harnessing the therapeutic power of nature can lead to more effective and sustainable approaches in mental health care, benefiting both clients and practitioners alike (Jordan & Hinds, 2016).

Third, ecotherapy practitioners and programs should consider including curriculum and practices that span the full range of human needs from the anthropocentric to ecocentric. Transcendence, as defined by Maslow very nearly describes an ecocentric worldview where nature is an end rather than means. Moreover, one of Frankl's (1984) more salient refrains from logotherapy is that "happiness, cannot be pursued; it must ensue, and it only does so as the unintended side-effect of one's personal dedication to a cause greater than oneself..." (p. 12). Accordingly, focusing outward on a self-transcending good, such as nature, is essential to a meaningful existence and may be best achieved by combining personal growth and transcendent connection with nature. Given that many ecotherapists themselves tend to practice from a place of ecospiritual meaning-making (King & McIntyre, 2018), it would be important, ethically, to develop models that work across different spiritual and religious worldviews, thereby minimizing the odds of imposing values (Deal & Bukowski, 2021).

Limitations and Future Research

While this study helps to inform an understanding of participant experiences of ecotherapy programs, several limitations need to be addressed. First, although the CQR approach mitigates issues of researcher bias with a rigorous team discussion and deliberation process regarding domain development, the research team included a homogenous group of white researchers with a positive and privileged relationship with the natural world. Second, findings of this study are limited to the relative homogeneity of participants as most participants were

female, all identified as Caucasian, and as being from a middle to upper middle-class socioeconomic status. Diversifying the researchers and participant sample with other racial, ethnic, and gender groups as well as different levels of privilege and access to natural spaces will provide greater transferability of ecotherapy program research. Third, selection bias is also possible, and domains may better represent participants with more favorable experiences of nature from their past or from the program. Fourth, to reduce recall bias we considered interviewing participants immediately following the program but decided on the four-to-six week window to learn about salient as well as enduring experiences. Future studies might interview participants immediately after the program as well as six months later to understand how domains change over time. Finally, more research is needed on actual ecotherapy programs. Mixed-methods or quantitative designs are warranted to understand which order and combination of common factors might be most effective for specific symptoms (e.g., generalized stress v. eco-despair), and disorders (e.g., depression v. trauma)? Others might investigate if ecospirituality variables add incremental validity, over and above level one factors, to regression models looking at positive and negative mental health outcomes.

Conclusion

This study advances understanding of how an ecotherapy program can facilitate healing by weaving together anthropocentric and ecocentric approaches. Participants found the greatest benefit when nature provided both regulation (e.g., stress reduction, presence) and meaning (e.g., transcendence, awe), suggesting a synergistic effect between levels. These findings affirm ecotherapy's alignment with transpersonal counseling principles and emphasize the value of including ecocentric values—such as interconnection, gratitude, and reciprocal spiritual belonging—in therapeutic design. As ecotherapy continues to grow as a discipline, further

research is needed to articulate and test comprehensive models of healing that reflect the full spectrum of human needs: from the regulation of the nervous system to the awakening of an ecological self.

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Appendix A

- a) What stands out for you about your time in the ecotherapy stress reduction program?
- b) What were you hoping to gain from the program?
- c) Were you surprised by any aspects of the program? Please explain.
- d) Did you notice any changes in how you respond to stress? Please explain.
- e) How would you describe your relationship with nature?
- f) Did you experience a sense of transcendence, or experience/s where you felt yourself connected to or part of something greater, related to the program? What was that like?
- g) Did you notice any changes in the way you think during or after your experience in the program? Please explain.
- h) Did you notice any changes in the way you feel during or after your experience in the program? Please explain.
- i) Did you notice any behavioral changes that you would attribute to your time in the program? Please explain.
- j) When you think of all you experienced through the program, what most affected your relationship with stress/anxiety, positively? Please explain.