

Green Care: Mitigating Stress with Plants

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Received May 22, 2024

Ecotherapy, also known as nature therapy or green therapy, is the applied practice of Ecopsychology a therapeutic treatment that involves outdoor activities in nature such as care farming, animal-assisted interventions (AAI), social and therapeutic horticulture (STH), healing gardens and facilitated green exercise. Natural environment because of its role in species evolution has a restorative impact on humans increasing happiness promoting neurotransmitter serotonin production, applicable to many medical phenomena. Humans have an innate biological affinity for the natural environment -the *biophilia hypothesis* and *Biophilic design* is an integral part of *restorative environmental design*, an approach that seeks to re-establish positive connections between nature and humanity.

Key words: Green Therapy, Nature Therapy, Green Care, stress reversal, mental health

ECOTHERAPY AS GREEN THERAPY

Ecotherapy, a term first coined by Clinebell (1996) promulgated it as a type of ecological spirituality where a healthy relationship with Nature accelerates healing and development that is produced as a result of holistic interaction with nature. However, Roszak (1995) includes ecotherapy under ecopsychology i.e. there is amalgamation of “psychotherapeutic and psychiatric.” ‘Ecopsychology’ coined by Theodore Roszak in his 1992 book, ‘The Voice of the Earth’ is a field that combines psychology and ecology to promote sustainability.

Individuals can contribute significantly to achieving long-term environmental sustainability by adopting pro environmental behaviour patterns which can assist an understanding and identification of the factors leading to non-sustainable behaviours; recognize obstacles to more pro-environmental behaviours; outline strategies for initiating change and encouraging sustainable action; augment communication between experts, legislators, and general mass relating to environmental issues finally contributing to policy development, implementation, and enforcement.

In the final decade of 20th century human-nature interaction evolved as an unambiguous environmental initiative and endeavour termed ‘Ecotherapy’ (Burns, 1998; Conn, 1998; Macy and Brown, 1998). Green Care or the Mind Evaluation report on Ecotherapy describes it as nature based interventions in a variety of natural settings (McGeeney, 2016). Thus it can be taken as an area of social psychiatry including the realms of mental health, psychology and ecology. With an aim to reconnect the human mind with ecosystems we come back to the age old Indian philosophy of inseparable association of man and nature.

The Mind evaluation report on ecotherapy called Green Care emphasizes that nature-based interventions in a variety of natural settings constitute ecotherapy. It may thus be considered as an ecosystem service where the natural world assists healing and growth. The biopsychosocial health of humans may be correlated to the health of the planet with its natural ecosystems.

Ecotherapy thus connects man to nature in healing from physical and mental illnesses and evokes in humans a sense of belonging with nature. The term ‘Green Care’ has been proposed for all nature mediated healing activities including flora and fauna (Pretty *et al.* 2006).

SUGGESTED THEORIES OF ECOTHERAPY

The ‘Biophilia Hypothesis’ proposes human need and innate tendency to associate with nature. Biophilia’ used by German-born American psychoanalyst Erich Fromm in *The Anatomy of Human Destructiveness* (1973), which described biophilia as “the passionate love of life and of all that is alive.” The term was later used by American biologist Edward O. Wilson in his work *Biophilia* (1984) is an innate and genetically determined affinity of human beings with the natural world. Based on Biophilia theory (Wilson, 1984), which proposes humans’ affiliation with nature, necessitates a need to connect with “nature on physical, mental and social levels” On a societal level, biophilic urban spaces are ones that are climate positive, sustainable, promote health and wellness, and connect us to nature. Biophilic design is based on the theory that humans have an innate biological affinity for the natural environment -the biophilia hypothesis – and is informed by research on the restorative benefits of nature and psycho-evolutionary theories of landscape preference. Biophilic design emerged at the beginning of the twenty-first century as an integral part of restorative environmental design, an approach that seeks to re-establish positive connections between nature and humanity.

Hartig *et al.* (2003) showed that walking in a nature reserve can create positive feelings and reduce anger; while walking in an urban environment can cause the reverse. Ulrich *et al.* (1991) also found that exposure to a natural environment improve individuals’ psychological state compared to an urban environment. The physiological measures (i.e., heartbeat cycle, pulse, skin conduction, and muscle tension) further revealed that the natural environment can mobilize the parasympathetic nervous system, relieve stress, and restore calmness. Currently cities and urban settings are being re-conceived with touches of flora and fauna. Such green cities can contribute to healthier citizens

with pro-environment outlook and behaviour (Sen 2019a, 2020a, 2023a).

Urgent Biophilia suggests that humans consciously seek out contact with nature to strengthen their resilience during a crisis or disaster. The pandemic can be seen as a 'global natural experiment' in human–nature interactions that can provide unprecedented mechanistic insights into the complex processes and dynamics of these interactions and into possible strategies to manage them to best effect. Green space visiting rates reported an overall increase compared to pre-pandemic times, on both a global scale as well as within specific cities, which suggest a widespread conscious desire to seek interactions with nature during a period of stress (Sen, 2023b,c) – a manifestation of 'Urgent Biophilia'.

The Eco-Existential Positive psychology emphasizes that innate biophilic tendencies in humans increase the ability of combating anxiety, isolation and loneliness and thus improves well-being. ART (Attention Restoration Theory), nature having ample stimuli easily captures human involuntary attention thus improving directed attention/cognitive abilities which further leads to better performance in memory/attention tests (Kaplan, 1995).

SRT (Stress reduction theory) suggests that natural environment because of its role species evolution has a restorative impact on humans (Ulrich, 1981). Three elements which include non-threatening landscapes, green plants and nature-specific elements elicit positive emotions. Natural environment stimulates the parasympathetic nervous system thus causing stress reduction and autonomic arousal. Ulrich *et al.* (1991) reported that natural landscapes increased happiness promoting neurotransmitter serotonin production, a landmark research finding applicable to many medical phenomena like depression, PTSD, recovery and pain reduction, ADHD etc.

Ali Khan *et al.* (2016) studied the effects of green plants on patients in hospitals and found that patients in wards with green plants were significantly better with more positive emotions and chances for post-operative recovery. Method of achieving therapeutic effects through exposure and presence of green plants and activities related to green plants such as planting,

pruning, watering, caring etc. is called 'horticultural therapy'.

THE PANDEMIC AND ECO-THERAPY

The pandemic can be seen as a 'global natural experiment' in human–nature interactions that can provide extraordinary insights into the multifaceted processes and dynamics of such interactions. According to a survey conducted by Biswas and Sen (2020), houseplants brought emotional benefits to 74% of participants during COVID-19 lockdown. More than 55% of respondents said they wished for more plants in their homes at that difficult time. Participants who had no indoor plants and little natural light at home experienced negative emotions (like anxiety, fear, and stress) more frequently than those with houseplants. Just over half of participants said they increased the amount of time they spent caring for their plants during lockdown, while nearly 63% said they wanted to devote more time to plant care once things got back to normal. A positive association between gardening and mental wellness was reported by Ambrose *et al.* (2020). During extended periods of isolation and 'lockdown' Zhang *et al.* (2020) reported the positive impact of plants on emotional well-being.

Technobiophilia, on the other hand, is the synchronized fusion of the natural with the virtual world through dual affinity for nature and technology. Nature photographs, animated screensavers or posts on nature on social media can urge us to connect with nature providing better emotional well-being and mental health, partly alleviating fatigue and stress. Technobiophilic practices fuse nature with technology, maintain balance and stability through a tech-nature harmony and promote pro-environmental behaviour, perspectives and outlook bridging nature and technology (Sen, 2022).

During the lockdown and physical distancing period of Covid 19, there were considerable impositions and restrictions on travel and tourism and Technobiophilia played an important role in our lives. To relieve the stress and monotony, people frequently appreciated nature and natural landscapes, wildlife, biodiversity etc on virtual media which helped them cope better with the real or physical world by relieving stress and anxiety.

DIFFERENT FORMS OF ECO THERAPY

Ecotherapy, also known as nature therapy or green therapy, is the applied practice of Ecopsychology and is a therapeutic treatment that involves outdoor activities in nature. Activities such as care farming, animal-assisted interventions (AAI), social and therapeutic horticulture (STH), healing gardens and facilitated green exercise are some suggested therapies. Green space and wilderness therapy are two ecotherapy approaches being used to address mood modification and stress reduction. Green space is important for physical and mental well-being. Interaction and engagement with green space have been linked with increased length of life and decreased risk of mental illness (Sen 2021, 2022, 2024) across a number of countries. Wilderness therapy is a treatment which uses a structured approach to work with adolescents with behavioral problems. On the other hand, eco-tourism or green tourism may be strongly suggested for over all wellness and well-being of any individual comprising environmental stimulus, engagement and green tourist intentions (Hou *et al.* 2023, Sen 2020b,c).

Green Mind Theory proposed by Pretty *et al.* (2017) connects the human mind with the brain and body, and links the body with natural and social environments. The processes are reciprocal – environment shapes the body, brain and mind and the human mind in turn, influences behaviours which shape the external environment. The Green Mind Theory thus provides options to improved individual well-being while simultaneously framing a greener economy.

CONCLUSION

Environmental problems are really problems of human behaviour, caused by collective human actions and their underlying thoughts, beliefs, feelings, and values. Individuals can contribute significantly to achieving long-term environmental sustainability by adopting pro environmental behaviour patterns (Sen 2017, 2019b). Attempts to improve environment applies and evaluates interventions that change these antecedents and the behaviour. Behavioural interventions are generally more effective when they are systematically planned, implemented and evaluated.

Nature has power to both disrupt lives or to act as a restorative force. People have always believed that nature is healing. The various ways in which it is curative include assisting cognitive freedom, ecosystem connectedness, escape, challenge, growth, guidance, a renewed social life and ultimate health and overall well-being (Gifford, 2007).

CONFLICTS OF INTEREST

The author declares that he has no potential conflicts of interest.

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