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Healing Through Nature

*Shraiya Bedi[1] and Ajay Kumar[2]
[1]M.Sc. (Floriculture and Landscape Architecture), Dr YSP UHF, Nauni, Solan, H.P.
[2]M.Sc. (Seed Science and Technology), Dr YSP UHF, Nauni, Solan, H.P.
*Corresponding Author's email: shraiyabedi@gmail.com

Therapeutic gardens are increasingly recognized as an effective non-pharmacological intervention within modern healthcare systems. These purposefully designed healing spaces serve as therapeutic landscapes that support both physical and horticultural therapy programs through structured horticultural and non-horticultural activities. Empirical evidence demonstrates their multifaceted benefits, including enhanced patient treatment outcomes, reduced stress levels among patients and healthcare staff, improved hospital performance indicators, increased work efficiency, and decreased healthcare costs. Specifically designed to address the needs of patients with neurocognitive and mental health conditions such as autism spectrum disorder, dementia, and Alzheimer's disease, therapeutic gardens incorporate evidence-based design principles that facilitate psychological well-being, cognitive stimulation, and physical rehabilitation through nature-based interactions. This article presents a comprehensive review of empirical studies examining the implementation and efficacy of therapeutic gardens in healthcare settings, with particular focus on their therapeutic mechanisms, optimal design features, and quantifiable impacts on patient care and institutional healthcare outcomes. The findings underscore the growing importance of therapeutic gardens as a complementary, cost-effective intervention in contemporary healthcare practice.

Types of Therapeutic gardens

Healing Garden: - Healing gardens are commonly integrated into healthcare facilities, such as hospitals and clinics, with the purpose of fostering a tranquil and restorative atmosphere

for patients, visitors, and medical staff. These gardens are intentionally designed to incorporate diverse vegetation, water features, and designated seating areas to facilitate relaxation and emotional recovery. Their structured environment supports mental well-being and stress alleviation through interaction with nature.

Sensory Garden: - Sensory gardens are designed to engage the five senses- sight, sound, touch, taste, and smell- through intentional landscaping. These gardens are especially therapeutic for individuals with sensory processing disorders, dementia, or developmental disabilities. Key design elements may include aromatic plants, varied textures, auditory features such as wind chimes, and calming water installations, all of which contribute to multisensory stimulation and cognitive or emotional support.

Children's Gardens: - Children's gardens are designed with an educational focus, promoting experiential learning, exploration, and fostering a connection with nature. These gardens typically incorporate interactive features, instructional signage, and child-friendly plantings to engage young learners.

Memory gardens: - These are purposefully designed therapeutic landscapes tailored for individuals with Alzheimer's disease and related forms of dementia. These gardens aim to stimulate cognitive recall, evoke nostalgia, and reinforce a sense of familiarity through carefully selected elements. Common features include recognizable vegetation, clearly defined pathways, and structured spatial layouts, all of which support spatial orientation, reduce disorientation, and alleviate anxiety in users.

Community Gardens: - Typically situated in urban environments and accessible to the public, community gardens serve as multifunctional green spaces that extend beyond mere horticultural purposes. Although not explicitly designed for therapy, they confer significant physical, psychological, and social advantages. These communal spaces promote social cohesion, facilitate physical activity, and enhance mental well-being by fostering interpersonal connections and a collective sense of ownership among participants.

Wellness Gardens: - Designed to enhance holistic well-being, wellness gardens provide curated environments that facilitate meditation, yoga, and mindful reflection. These intentionally designed spaces prioritize psychological restoration and emotional equilibrium, fostering mindfulness and inner harmony through immersive natural settings. By integrating elements such as tranquil seating areas, sensory vegetation, and serene landscapes, they serve as therapeutic retreats that promote mental clarity and stress reduction.

Plants for therapeutic garden

1. Auditory Stimulation for Relaxation

The incorporation of sound-enhancing plants-such as bamboos, bull bay (Magnolia grandiflora), copper pods (*Peltophorum pterocarpum*), banana (*Musa spp*.), sweet corn (*Zea mays*), and lavender (*Lavandula spp*.) (which attracts buzzing bees)- creates a calming soundscape that promotes neural relaxation.

2. Olfactory Stimulation for Stress Relief

Scented Flowers: Lavender (*Lavandula*), rose (*Rosa spp*.), stock (*Matthiola incana*), and blue bottle (*Centaurea cyanus*) emit soothing fragrances.

Scented Climbers: Honeysuckle (*Lonicera spp*.), hiptage (*Hiptage benghalensis*), potato vine (*Solanum jasminoides*), star jasmine (*Trachelospermum jasminoides*), Rangoon creeper (*Quisqualis indica*), and bower vine (*Pandorea jasminoides*) enhance aromatic engagement.
Scented Shrubs: Glossy abelia (Abelia × grandiflora), Cape jasmine (*Gardenia jasminoides*), Din ka raja (*Cestrum nocturnum*), Kamini (*Murraya paniculata*), Arabian jasmine (*Jasminum sambac*), and night-blooming jasmine (*Cestrum nocturnum*) contribute to a restorative sensory experience.

3. Stress-Relieving Herbs

Plants with calming properties- such as lavender (Lavandula), basil (Ocimum basilicum), passion flower (Passiflora incarnata), rosemary (Rosmarinus officinalis), balm mint (Melissa officinalis), and chamomile (Matricaria chamomilla)- offer therapeutic benefits through both fragrance and interaction.

4. Shade Trees for Comfort and Cooling

Strategically planted shade trees, including Indian beech (*Pongamia pinnata*), Indian devil tree (*Alstonia scholaris*), and neem (*Azadirachta indica*), provide shelter from heat while contributing to a serene microclimate.

Therapeutic Benefits of Horticultural Gardens: An Evidence-Based Perspective

Empirical studies have demonstrated that horticultural therapy yields significant benefits across cognitive, social, physiological, and physical domains:

A) Cognitive Benefits

- **Enhanced cognitive functioning** through structured engagement with plants.
- **Improved concentration and focus** via mindful horticultural activities.
- **Memory stimulation and positive thinking** through sensory interactions with nature.
- **Development of problem-solving and planning skills** by learning plant care techniques.
- **Skill acquisition and vocational training** opportunities in gardening and landscaping.

B) Social Benefits

- **Facilitation of social integration** by fostering collaborative gardening activities.
- **Increased social interaction** among participants, reducing isolation.
- **Promotion of positive work habits and attitudes** through responsibility-based tasks.
- **Reinforcement of healthy social functioning patterns** in therapeutic settings.
- **Strengthened group cohesion, coping skills, and motivation** via shared horticultural experiences.

C) Physiological and Psychological Benefits

- **Improved quality of life** through nature-based stress reduction.
- **Reduction in anxiety, stress, and tension** via calming garden environments.
- **Increased confidence and hopefulness** through successful plant cultivation.
- **Encouragement of nurturing behaviour**, fostering emotional well-being.
- **Sensory stimulation** through tactile, olfactory, visual, and sometimes gustatory interactions with plants.

D) Physical Benefits

- **Enhanced strength, stamina, and mobility** through gardening tasks (digging, planting, pruning).
- **Increased energy and endurance** from moderate physical activity in green spaces.
- **Improved hand-eye coordination** via precise actions like sowing seeds or transplanting.
- **Greater flexibility and motor skills** through bending, stretching, and tool manipulation.

Conclusion

The presence of aesthetically pleasing flowers and foliage plants may serve as a complementary therapeutic intervention for patients. This shows that plants provide meaningful restorative benefits, particularly for individuals confined indoors during recovery from painful surgical procedures. As a non-pharmacological adjunctive therapy, this approach not only enhances overall health outcomes but also proves cost-effective, reducing

hospitalization expenses and medication usage for both patients and healthcare insurers. Healthcare professionals and hospital administrators should consider incorporating ornamental plants to optimize healing environments for patients. This article highlights the therapeutic value of healing gardens, reinforcing their role as a complementary treatment modality in healthcare.

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