healing gardens and horticultural therapy

creating Outdoor Environments for healing

HCD09 Roundtable Discussion
November 3, 2009

Rebecca Haller, HT Institute
Bruce Hendee, BHA Design
Angela Milewski, BHA Design

Program
Design Components
Process
Research/Evaluation
What is Horticultural Therapy?

“Horticultural therapy is the engagement of a client in horticultural activities facilitated by a trained therapist to achieve specific and documented treatment goals. The American Horticultural Therapy Association (AHTA) believes that horticultural therapy is an active process which occurs in the context of an established treatment plan where the process itself is considered the therapeutic activity rather than the end product. Horticultural therapy programs can be found in a wide variety of healthcare, rehabilitative, and residential settings.”

From “AHTA Position Paper” as posted on www.ahta.org
Prepared by: American Horticultural Therapy Association (AHTA) Copyright 2007
Editor: Elizabeth R. Messer Diehl, ASLA, HTM

Horticultural therapy is a complementary therapy, providing an additional set of treatment protocols used in a hospital or long-term care setting.

Patient Populations
Horticultural therapy is used successfully with multiple patient groups, including:

- People with physical and cognitive impairments
- Seniors
- Cancer patients
- Physical therapy clients
- Alcohol recovery clients
- Spinal cord and brain injury patients
- People with neurological impairments
- Alzheimer’s and dementia groups
- Children
- Virtually all patient groups

Outcomes
Horticultural therapy uses the special connection people feel with plants, gardening and nature as a vehicle to facilitate therapy and rehabilitation in a non-threatening environment (Davis, 1998). Outcomes include increases in cognitive, social, physical, and emotional abilities such as:

- Fine motor skills
- Strength
- Range of motion
- Activity tolerance
- Dynamic sitting or standing balance
- Memory
- Cognition
- Pain management
**Treatment-driven Design**

Treatment protocols vary for specific patient populations. Following are examples of some typical horticultural therapy treatment goals in three types of healthcare settings, followed by design considerations to support them:

<table>
<thead>
<tr>
<th>SETTING</th>
<th>TREATMENT GOALS</th>
<th>DESIGN CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL REHABILITATION</td>
<td>Standing tolerance</td>
<td>Raised garden beds at various heights, seating</td>
</tr>
<tr>
<td></td>
<td>Pain management</td>
<td>Treatment area for gardening in a group</td>
</tr>
<tr>
<td></td>
<td>Grasp or hand strength</td>
<td>Storage space for adaptive or modified gardening tools</td>
</tr>
<tr>
<td></td>
<td>Community reintegration</td>
<td>Enabling garden demonstration area, showing varied techniques, inclines, planters, materials, etc.</td>
</tr>
<tr>
<td>ALZHEIMER’S/ DEMENTIA</td>
<td>Reduce agitation</td>
<td>Wandering path with clear wayfinding</td>
</tr>
<tr>
<td></td>
<td>Elicit memories and orientation to self</td>
<td>Fragrant and “old-fashioned” familiar plants</td>
</tr>
<tr>
<td></td>
<td>Follow directions, meaningful activity</td>
<td>Quiet, secure space for hands-on plant activities</td>
</tr>
<tr>
<td></td>
<td>Sensory stimulation</td>
<td>Non-toxic plants for touch, smell, hearing and sight</td>
</tr>
<tr>
<td>CHILDREN’S HOSPITAL</td>
<td>Eye-hand coordination</td>
<td>Kid-sized tools and space for digging, planting, cultivating</td>
</tr>
<tr>
<td></td>
<td>Cope with illness</td>
<td>Interesting plants (e.g. colorful, butterfly-attracting, wacky), water feature, sun/shade</td>
</tr>
<tr>
<td></td>
<td>Ambulation</td>
<td>Varied paving surfaces, with spaces to run, walk and crawl</td>
</tr>
<tr>
<td></td>
<td>Social skills, such as cooperation, sharing, etc.</td>
<td>Gathering places to sit and to be on the ground</td>
</tr>
</tbody>
</table>
Fundamental Components for all therapy gardens
- Principles of Universal Design (NC State University, The Center for Universal Design)
- Varied opportunities for interaction
- Spaces for client, therapist and plants
- Access to water and tools

Unique Components for specific patient populations
- Shaded spaces – increased sun sensitivity due to medications
- Varied inclines for increasing physical challenges
- Varied height planters, vertical planters
- Adaptive tools
- Plant Selection – memory triggers, scents, edibles
- Transitional spaces – from inside to outside

Case studies

**Craig Hospital, Englewood, CO**
As an integral part of the therapeutic recreation department, the horticultural therapy program serves patients with spinal cord injuries and traumatic brain injuries. Under the supervision of professional staff, patients experience indoor and outdoor gardens, plant-related activities, therapy and education on the use of adaptive gardens and tools, and leisure skills to support successful community reintegration. This program has offered its healing benefits to patients since 1982.

**Rusk Institute of Rehabilitation Medicine, New York, NY**
Since the 1970s, the horticultural therapy program has served patients of all ages, with a wide variety of rehabilitation needs. Group sessions focus on regaining cognitive, social and emotional functioning. Indoor and outdoor gardens feature water, captivating plants, birds and fish to provide a healing environment in the heart of New York City.

**Margaret T. Morris Center, Prescott, AZ**
Serving residents with memory loss, the horticultural therapy program offers sensory stimulation, stress management, and delight through activities designed to maximize well-being. The outdoor gardens promote exploration and exercise, and provide peace and inspiration for families to stay connected with loved ones who experience Alzheimer’s Disease or other forms of memory loss.

**Children’s Hospital at Legacy Emanuel, Legacy Health, Portland, OR**
The Legacy Emanuel Children’s Hospital Garden provides a year-round place for children and their families to play and explore in a safe, secure, homelike setting. Designed and programmed for the widest range of abilities, each rehabilitation therapy uses the garden to help restore patient health. The garden includes a variety of walking surfaces, stairs, ramps, inclines, and other opportunities for cognitive and physical activities needed by therapists.
**Integrated Design**
- Identify and involve stakeholders
- Determine potential sites and primary users
- Identify human and capital resources
- Work directly with caregivers to identify treatment protocols
- Research therapy options for specified patient groups
- Develop program statement
- Develop design based on evidence-based criteria
- If appropriate, work with research institution to develop experimental methodologies
- Identify costs of construction and methods of future maintenance
- Implementation
- Post-occupancy evaluation and publication of findings
RESTORATIVE BENEFITS OF NATURE: Roles in Restoring Directed Attention Fatigue


- The natural environment acts as a simple yet fulfilling stimulus with an extent large enough to fill one’s mind without complexity or abstractness
- The experience in a natural environment has been proven to mitigate or eliminate stress while restoring one’s directed attention


- Natural settings are viewed as "soft fascination"
- Soft fascination allows a variety of restorative benefits including reflection as well as recovery of directed attention

HORTICULTURAL THERAPY: Roles in Cardiac Rehabilitation


- Horticultural Therapy has proven to be effective in reducing the stress and heart rate of the patients
- As stress is related to coronary heart disease, this study suggests that Horticultural Therapy is an effective means of reducing stress and therefore mitigating the onset of coronary heart disease
Horticultural Therapy: Roles in Individuals with Mental Retardation


- Significant improvement in interpersonal relationships and sociality
- Improvement in self-esteem
- Client-Client Interaction and Client-Therapist Interaction was significantly improved

Horticultural Therapy: Roles in Individuals with Dementia


- Indoor gardening was found to be an effective measure of reducing agitation and increasing cognition and quality of sleep
- Improvements in wake after sleep onset, nap, nocturnal sleep time, and nocturnal sleep efficiency
- Agitation and cognition scores were significantly improved

Analysis of a horticultural therapy program at a nursing home in Kanagawa, Japan


- Results show an increased attention span and improved communication skills
- Patients with dementia showed significant increases in motivation, interest, and feeling
- The patients’ ability to maintain motivation and concentration increased until the program was finished. They expressed a willingness and eagerness to finish their tasks at hand
- After two months of horticultural therapy, the patients actively initiated conversations, communicated with others, and made an effort to understand task directions


- Horticultural Therapy has been shown to improve psychological sociality of its participants
- Horticultural activities involving the buddy system could be the most important factor on horticultural activities
Groups implementing a buddy system were found to be more active and positive than singular horticultural activities.

Significant beneficial effects on activities of daily life.

Cooperation was significantly increased and maintained.

Patients’ desire to join activities also increased.

The gardening group had a significant increase in psychological well-being, whereas the control group had a slight decrease in psychological well-being.

Horticultural activities may be shown to have a beneficial effect on the current psychological well-being of older persons in a long-term care facility.

Improvements in participation, interest and assistance, self-concept and identity, need-drive adaptation, cognition, and problem-solving.

Horticultural Therapy was also found to contribute to increased life satisfaction.

The Horticultural Therapy program as a recommendation to improve recovery and comfort of Hospice patients.

Lower levels of pain, anxiety, and depression significantly correlate to a higher quality of life.
Plants and Foliage: Roles in Surgical Recovery


Patients in hospital rooms with plants and flowers had significantly shorter hospitalizations

- Fewer intakes of analgesics
- Lower ratings of pain, anxiety, and fatigue
- Greater positive feelings and higher satisfaction about their rooms when compared with patients in the control group


Patients in hospital rooms with plants and flowers had significantly fewer intakes of postoperative analgesics

- Positive physiological responses evidenced by lower systolic blood pressure and heart rate, lower ratings of pain, anxiety, and fatigue
- More positive feelings and higher satisfaction about their rooms when compared with patients in the control group
- Findings of this research suggested that plants in a hospital environment could be noninvasive, inexpensive, and an effective complementary medicine for patients recovering from abdominal surgery

Rusk Institute
RESOURCES

Session Moderator Contact Information

Rebecca Haller
Horticultural Therapy Institute
www.htinstitute.org

Bruce Hendee, Angela Milewski
BHA Design Incorporated
www.bhadesign.com

Recommended Book List

Journal of Therapeutic Horticulture (published annually by AHTA)
Horticultural Therapy Methods: Making Connections in Health Care, Human Service, and Community Programs - Haller and Kramer
Horticulture as Therapy: Principles and Practice - Simson and Straus
Restorative Gardens: The Healing Landscape - Gerlach-Spriggs, Kaufman and Warner
The Enabling Garden: Creating Barrier-Free Gardens - Rothert
The Meaning of Gardens - Francis
Biophilia Hypothesis - Wilson
Designing for Alzheimer’s Disease - Brawley
Healing Landscapes - Marcus and Barnes
Healing Gardens - Rawlings
Interaction by Design - Shoemaker
The Experience of Nature - Kaplan and Kaplan
The Healing Landscape - Tyson
Pattern Language - Alexander
With People in Mind - Kaplan, Kaplan and Ryan
People Places: Design Guidelines for Urban Open Space - Marcus and Francis
The Social Life of Small Urban Spaces - Whyte
Design with Nature - McHarg
Last Child in the Woods - Louv

Websites

American Horticultural Therapy Association (AHTA)
www.ahta.org

Therapeutic Landscapes Database
www.healinglandscapes.org/index.html

American Society of Landscape Architects (ASLA)
www.asla.org

Rusk Institute of Rehabilitation Medicine, New York, NY
www.med.nyu.edu/sglassgardens

Margaret T. Morris Center Therapeutic Garden, Prescott, AZ
www.adultcareservices.org/mtmc_garden.html

Children’s Hospital at Legacy Emanuel, Portland, OR
www.legacyhealth.org

Craig Hospital, Englewood, CO
www.craighospital.org

The Center for Universal Design, NC State University
www.design.ncsu.edu/cud