

# Horticultural Therapy: A Psychosocial Treatment Option at the Stephen D. Hassenfeld Children's Center for Cancer and Blood Disorders

Gwenn G. Fried and Matthew J. Wichrowski, MSW, HTR

## ABSTRACT

*Quality psychosocial care for patients undergoing treatment for hematology/oncology disorders and their families serves to reduce the inevitable disruptions in life experienced during treatment. Horticultural therapy, a process through which plants and gardening activities are used as vehicles in professionally conducted programs of therapy, is a program option that can address the psychosocial needs of patients in numerous medical situations. The horticultural therapy program at the Stephen D. Hassenfeld Children's Center for Cancer and Blood Disorders of New York University Langone Medical Center is designed to stimulate sensory, cognitive, and communication skills as well as increase knowledge and awareness of nature while providing a stress-reducing diversion during treatment. This program provides a range of benefits that complement other treatment options and serves to help minimize potential challenges in the quality of life for patients and their families.*

## INTRODUCTION

Current trends in care for patients undergoing treatment for hematology/oncology issues increasingly include programs that address psychosocial needs as part of the treatment regimen.<sup>1-3</sup> Various psychosocial interventions have shown potential to help normalize the treatment process,<sup>1</sup> decrease the stigma of treatment,<sup>4</sup> and help reduce the negative impact of the condi-

**Needs Assessment:** Psychosocial interventions that address the needs of the whole person have been shown to provide unique benefits to both patients and their families. This is especially relevant and challenging when treating pediatric patients having particular needs. Horticultural therapy is being increasingly offered as a psychosocial intervention designed to meet a variety of needs for many patient groups.

### Learning Objectives:

- Understand the history and uses of horticultural therapy.
- Understand horticultural therapy as a psychosocial intervention.
- Understand the importance of developmentally appropriate interventions for pediatric hematology/oncology patients.

**Target Audience:** Primary care physicians and psychiatrists.

**CME Accreditation Statement:** This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the Mount Sinai School of Medicine and MBL Communications, Inc. The Mount Sinai School of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

**Credit Designation:** The Mount Sinai School of Medicine designates this educational activity for a maximum of 3 *AMA PRA Category 1 Credit(s)*<sup>™</sup>. Physicians should only claim credit commensurate with the extent of their participation in the activity.

**Faculty Disclosure Policy Statement:** It is the policy of the Mount Sinai School of Medicine to ensure objectivity, balance, independence, transparency, and scientific rigor in all CME-sponsored educational activities. All faculty participating in the planning or implementation of a sponsored activity are expected to disclose to the audience any relevant financial relationships and to assist in resolving any conflict of interest that may arise from the relationship. Presenters must also make a meaningful disclosure to the audience of their discussions of unlabeled or unapproved drugs or devices. This information will be available as part of the course material.

This activity has been peer-reviewed and approved by Eric Hollander, MD, chair and professor of psychiatry at the Mount Sinai School of Medicine, and Norman Sussman, MD, editor of *Primary Psychiatry* and professor of psychiatry at New York University School of Medicine. Review Date: June 4, 2008.

Drs. Hollander and Sussman report no affiliation with or financial interest in any organization that may pose a conflict of interest.

**To receive credit for this activity:** Read this article and the two CME-designated accompanying articles, reflect on the information presented, and then complete the CME posttest and evaluation found on page 84. To obtain credits, you should score 70% or better. Early submission of this posttest is encouraged; please submit this posttest by July 1, 2010 to be eligible for credit. Release date: July 1, 2008. Termination date: July 31, 2010. The estimated time to complete all three articles and the posttest is 3 hours.

Ms. Fried is horticultural therapist and Mr. Wichrowski is senior horticultural therapist in the OT/PT Department at the Glass Garden, Rusk Institute at New York University Langone Medical Center in New York City.

Disclosure: The authors report no affiliation with or financial interest in any organization that may pose a conflict of interest.

Please direct all correspondence to: Matthew J. Wichrowski, MSW, HTR, Glass Garden, Rusk Institute, NYUMC, 400 E 34th St, New York, NY 10016; Tel: 212-263-6058; Fax: 212-263-2091; E-mail: matthew.wichrowski@nyumc.org.

tion.<sup>3</sup> These treatment issues are especially important when the patient is a child or adolescent. Their developmental stages and needs create extra challenges in ensuring positive outcomes.<sup>5</sup> Through well-defined psychosocial practices, children and families are better prepared to cope with cancer and become well-adjusted survivors.<sup>3</sup> Horticultural therapy is increasingly offered as a program component providing an array of psychosocial benefits for many groups of patients.

Biophilia is described as our predisposition to react positively to natural settings that suggest safety and shelter; offer hope for sources of food, medicine, and tools; and provide aesthetic enjoyment.<sup>6</sup> Nature has been utilized as a therapeutic aid for thousands of years. Egyptian court physicians prescribed taking walks in the palace gardens for mentally disturbed members of royalty. Benjamin Rush, MD, founder of Friends Hospital, observed that field labor in a farm setting had a curative effect on patients. After World War I, horticultural activities were used with veterans during their occupational therapy sessions at Menninger's Clinic.<sup>7</sup>

Today, horticultural therapy is the process through which plants and gardening are used as vehicles in professionally conducted programs of therapy.<sup>7</sup> Horticultural therapy is used with individuals of all ages in a wide variety of applications including work in mental health,<sup>8</sup> with people who have developmental disabilities,<sup>9</sup> in educational settings,<sup>9,10</sup> and in diverse healthcare settings.<sup>11-14</sup>

Although there is only a modest number of studies describing the clinical effects of horticultural therapy, an increasing body of literature supports the benefits of both passive and active interaction with nature. Ulrich<sup>15</sup> reported decreased use of narcotic analgesics when compared to acetaminophen and a slightly shortened length of stay when cholecystectomy patients had a view of a landscaped area compared to patients who had a view of an adjacent building. In other studies, changes in physiologic indicators corresponding with stress reduction, including lowered heart rate,<sup>15,16</sup> have been reported. Likewise, cognitive restoration in newly diagnosed breast cancer patients<sup>17</sup> and enhanced mood in cardiac rehabilitation patients<sup>16</sup> have been documented.

In practice, horticultural therapy provides a wide range of benefits in physical, emotional cognitive and social domains. Gardening is a popular avocational activity, exercising fine and gross motor skills, range of motion, strength maintenance, and endurance.<sup>18</sup> Emotional benefits include enhanced self-esteem and mood.<sup>16,19</sup> Learning about plants provides cognitive stimulation, as it exercises sequencing memory, and work with plants helps reduce stress.<sup>20</sup> In addition, a wide range of social benefits can be achieved by a skilled therapist such as instillation of hope, universality, and imparting information.<sup>21</sup>

## PROGRAM DESCRIPTION

The Glass Garden at Rusk Institute is the home base for the horticulture program at the Stephen D. Hassenfeld Children's Center for Cancer and Blood Disorders (SDHCC). Since its inception in 1959, the Glass Garden has provided a tranquil respite for patients, families, visitors, and staff of the SDHCC.

Initially, the conservatory was maintained as an amenity for the patients to visit and enjoy. However, the patients wanted more than just a visit; they wanted to work with the plants while they were there. This desire, coupled with the birth of the field of clinical horticultural therapy in the early 1970s, changed the role of the Glass Garden and the Glass Garden staff. Once merely a place for passive enjoyment of nature, the garden, which is now staffed with professional horticultural therapists, became a hub for helping, healing, and empowerment.

Today, the Glass Garden is far more than the original conservatory. When the current director, Nancy Chambers, came on board in 1986 she embraced a mission to develop the garden and its programs to reach far beyond the four glass walls of the original building. Her vision has seen the addition of a fully accessible perennial garden and an award-winning, state of the art, children's PlayGarden that is regarded as a model to replicate in healthcare garden design.

Programming at the Glass Garden has also taken on new dimensions. In addition to four 1-hour intergenerational groups per day for inpatients at Rusk Institute, the staff runs horticulture programs in the Rusk Pre-school, Tisch Hospital Pediatric Child-Life Program, Psychiatric Unit, Cardiac Rehabilitation Unit, and Epilepsy Unit. The garden hosts programs for schools, senior centers, aphasia community groups, Alzheimer's and dementia support groups, psychiatric day programs, adult day care, and nursing homes.

One of the most requested services at the Glass Garden is a staff therapist to conduct regularly scheduled horticulture groups at an off-site location. One such program at a senior center has been running for >6 years.

This is the kind of program that is currently running at the SDHCC. In 2006, the Glass Garden's horticultural therapy team began a pilot program at the center's New York City location. The team at the SDHCC was committed to adding this component to their innovative treatment milieu so they worked around the limited space and other logistical issues to fit the nature-based activity group into the weekly program. The new location at the upgraded space has really helped develop a vigorous program.

## PROCEDURE

Each week, the horticultural therapist brings a plant or group of similarly themed plants to the center. The participants will plant them using the pots, sterile potting mix, plant labels, saucers, and anything else needed for the project. The Child-Life staff recruits medically cleared patients, their parents, siblings, care givers, and other staff members interested in participating. Class begins with participants' introductions followed by an overview of the plant or project presented. Country of origin, history, culture, folklore as well as culinary and medicinal uses are topics available for discussion. The group's theme can center on holidays, seasons, weather, geography, or other science topics. Each class may be different depending on the experiences, interests, and needs of its members. The leader demonstrates the project. Then, each group member completes his or her plant or project to take home.

Care is taken to provide numerous opportunities for decision making. For example, participants may choose which plant they want, how many cuttings they want to take, and what size pot is needed. The participants label the finished project with their name, name of the plant, and date. At the end of the class, participants talk about where they are going to keep their plant when they return home and review how to take care of it. The leader often asks how participants liked the class, but by this time the members are often involved in casual conversation about home, hobbies, and other normal activities.

**FIGURE 1**  
**INTERGENERATIONAL ENGAGEMENT**



A grandmother is teaching planting to her enthusiastic granddaughter while learning that properly handled soil is safe for projects at home.

Reprinted with permission from New York University Medical Center.

Fried GG, Wichrowski MJ. *Primary Psychiatry*. Vol 15, No 7. 2008.

## PROGRAM GOALS

The first goal of the program is to provide respite for the children and their family members while they receive treatment at SDHCC. Many of the center's patients are from countries other than the United States. Because most houseplants are from tropical or subtropical countries, the plant is often recognized as something from their home country. This often leads to sharing nostalgic stories about home, family, and friends. The child or parent may even assume the role of teacher, telling other members of the group how the plant is used in their homeland. A once overwhelmed caregiver has transformed into a teacher, sharing knowledge and information while experiencing a sense of empowerment that reaches far beyond the class.

The second goal of the program is to offer hands-on experiences with nature to stimulate sensory, cognitive, and communication skills. Numerous families at the center are there for outpatient treatment after an admission to an acute care hospital. Coming from a setting where gowns and gloves are the norm, they are often apprehensive toward touching anything in the "outside world." With the center's safe environment, families are reintroduced to these tactile and sensory experiences while being educated on safe ways to handle soil and plant material when they are at home (Figure 1). As the educational conversation and the planting continue, members tend to let down their guard. The colors, smells, and textures of nature begin to take

**FIGURE 2**  
**DIVERSIONARY ENGAGEMENT**



Patients engaging in hands-on nature activity become so involved they forget why they are there.

Reprinted with permission from New York University Medical Center.

Fried GG, Wichrowski MJ. *Primary Psychiatry*. Vol 15, No 7. 2008.

over. The experience becomes such a total sensory immersion that is so different from the clinical environment that members report momentarily forgetting where they are and why they are together (Figure 2).

A third goal is to introduce horticulture projects that increase knowledge of nature, science, nutrition, and environmental concepts. Each program is designed to be well rounded and rich in content. One class on planting ginger began with a challenge to the group members to see if anyone could recognize the root on the table. Clues of ginger ale and gingersnaps helped those who had trouble. At this point group members may discuss ginger roots in India, how the plant is produced or used in recipes, or medicinal uses from days gone by. Someone usually remembers a parent or grandparent giving him or her ginger ale as a remedy for nausea. If they ask, patients are encouraged to check with their doctor to see if they can use ginger tea or ginger ale as a remedy for the side effects of treatment (Table).

**TABLE**  
**GOALS FOR HORTICULTURAL THERAPY PROGRAMS**

***Emotional***

- Reduce stress and mental fatigue
- Enhance mood
- Increase pride in accomplishment
- Instill hope
- Enhance reminiscence
- Decision making

***Physical/Sensory***

- Enhance visual/perceptual skills
- Enhance endurance
- Distraction from pain
- Increase eye-hand coordination and fine motor skills
- Stimulate all senses

***Social***

- Increase engagement with others
- Enhance verbal and non-verbal skills

***Cognitive/Educational***

- Increase vocabulary and language skills
- Enhance sensory discrimination
- Increase ability to focus and engage
- Increase memory
- Express creativity
- Follow directions
- Increase horticulture knowledge as it integrates into history, geography, folklore, and art
- Plant culture

***Discovery/Wonder/Spirituality***

- Increase sense of community with nature
- Sense of fascination
- Stay in touch with seasonal changes

Fried GG, Wichrowski MJ. *Primary Psychiatry*. Vol 15, No 7. 2008.

**POSITIVE THEMES CULTIVATED IN HORTICULTURAL THERAPY GROUPS**

One of the favorite groups for children and adults alike is the ketchup class. Tomatoes and other ingredients are put together to make tomato ketchup. The product tastes just like the condiment that they know and love. Many participants are surprised to see what is in ketchup and they can easily create fresh ketchup at home without any chemical additives. In addition, they discuss how they can adjust this recipe to make a more sophisticated version custom flavored to their taste preferences.

Another positive theme occurs when planting a seed, root, or seedling comes with an expectation of change and growth. This implies hope for the future. As the participants complete the planting project they talk about what to expect as the plant grows. Comments like, "when that has roots, we will be done with these treatments" or "this plant will be 6 inches tall by your birthday" convey hope and allow the patient to recognize hope in the voices of a caregiver, parent, or child. Hope can be a powerful psychological factor in cancer treatments influencing prognosis and quality of life (Figure 3).<sup>21</sup>

One of the benefits of the program was not initially intended. The scope of programs at the Glass Garden touches all areas of the hospital and that means very often the therapist sees patients or their families in acute care, rehabilitation, and outpatient care at the SDHCC. It is

**FIGURE 3**  
**THINKING OF THE FUTURE**



Writing the planting date on the label gives patients a starting point for their expectations for the future.

Reprinted with permission from New York University Medical Center.

Fried GG, Wichrowski MJ. *Primary Psychiatry*. Vol 15, No 7. 2008.

very comforting for the patients to see a familiar face when they enter another phase of their treatment. Comments like, "I guess you are one big family," tell us that this is very settling for patients and their families to have familiarity from place to place on their journey.

## CONCLUSION

While the goals of the horticultural therapy option mesh well with the overall goals of the SDHCC in meeting the needs of patients and their families, there is limited empirical support for this relatively new treatment modality. More research is needed to document the benefits of horticultural therapy. Researching psychosocial interventions presents an array of methodologic challenges, particularly when team treatment approaches are used. Evaluating the effects of horticultural therapy on mood, stress, and distraction from discomfort during treatment, as well as on quality of life and overall satisfaction with treatment, would be helpful in determining the range of benefits that horticultural therapy programming provides and in what settings it is most effective.

Overall, horticultural therapy provides a treatment option addressing numerous needs for patients and their families at the SDHCC. Offering a variety of psychosocial interventions as part of the treatment team respects individual preferences and offers choice and some sense of control while battling a serious illness. Optimal cancer care balances the need for scientific knowledge, statistical analysis, and rational thought with the need for wisdom, kindness, compassion, and love.<sup>2</sup> Integrated treatment that provides a diversity of options aimed at maximizing treatment effectiveness and minimizing potential complications while enhancing quality of life helps fight disease and promotes well being for all dimensions of a person. A

treatment philosophy that honors the complexities of the human condition is a key feature in developing optimal healing environments in cancer care. *PP*

## REFERENCES

1. Kusch M, Labouvie H, Fleisback G, Bode U. Structuring psychosocial care in pediatric oncology. *Patient Educ Couns*. 2000;40(3):231-245.
2. Geffen JR. Creating optimal healing environments for cancer patients and their families: insights, challenges, and lessons learned from a decade of experience. *J Altern Complement Med*. 2004;10(suppl 1):S93-S102.
3. Zeitzer L. Cancer in adolescents and young adults: psychosocial aspects. *Cancer Suppl*. 1993;71(10):3863-3868.
4. Ritchie MA. Sources of emotional support for adolescents with cancer. *J Pediatr Oncol Nurs*. 1993;18(3):105-110.
5. Redd WH. Advances in psychosocial oncology in pediatrics. *Cancer Suppl*. 1993;74(4):1496-1502.
6. Kellert SR, Wilson EO. *The Biophilia Hypothesis*. Washington, DC: Island Press; 1993.
7. Davis S. Development of the profession of horticultural therapy. In: Simpson SP, Strauss MC, eds. *Horticulture as Therapy*. Binghamton, NY: Haworth Press; 1998:3-18.
8. Shapiro BA, Kaplan MJ. Mental illness and horticultural therapy practice. In: Simpson SP, Strauss MC, eds. *Horticulture as Therapy*. Binghamton, NY: Haworth Press; 1998:157-197.
9. Catlin P. Developmental disabilities and horticultural therapy practice. In: Simpson SP, Strauss MC, eds. *Horticulture as Therapy*. Binghamton, NY: Haworth Press; 1998:131-156.
10. Morris JL, Zidenberg-Cherr S. Garden-enhanced nutrition curriculum improves fourth-grade school children's knowledge of nutrition and preferences for some vegetables. *J Am Diet Assoc*. 2002;102:91-93.
11. Frazee M. Botanical gardening: design, techniques, and tools. In: Simpson SP, Strauss MC, eds. *Horticulture as Therapy*. Binghamton, NY: Haworth Press; 1998:355-375.
12. Wichrowski M, Chambers NK, Ciccantelli L. Stroke, spinal cord, and physical disabilities and horticultural therapy practice. In: Simpson SP, Strauss MC, eds. *Horticulture as Therapy*. Binghamton, NY: Haworth Press; 1998:71-104.
13. Strauss D, Gabaldo M. Traumatic brain injury and horticultural therapy practice. In: Simpson SP, Strauss MC, eds. *Horticulture as Therapy*. Binghamton, NY: Haworth Press; 1998:105-130.
14. Haas K, Simpson SP, Stevenson, NC. Older persons and horticultural therapy practice. In: Simpson SP, Strauss MC, eds. *Horticulture as Therapy*. Binghamton, NY: Haworth Press; 1998:231-256.
15. Ulrich RS. View through a window may influence recovery from surgery. *Science*. 1984;224(4647):420-421.
16. Wichrowski M, Whiteson J, Haas F, Mola A, Rey MJ. Effects of horticultural therapy on mood and heart rate in patients participating in an inpatient cardiopulmonary rehabilitation program. *J Cardiopulm Rehabil*. 2005;25(5):270-274.
17. Cimprich B. Development of an intervention to restore attention to cancer patients. *Cancer Nurs*. 1993;16(2):83-92.
18. Lantz B. Therapeutic gardening with physical rehabilitation patients. *Journal of Therapeutic Horticulture*. 2006;17:35-38.
19. Szofram J, Meyer S. Horticultural therapy in a mental health day program. *Journal of Therapeutic Horticulture*. 2004;15:32-35.
20. Taft S. Therapeutic horticulture for people living with cancer: the healing gardens program at cancer lifeline in Seattle. *Journal of Therapeutic Horticulture*. 2004;15:16-23.
21. Yalom ID. *The Theory and Practice of Group Psychotherapy*. New York, NY: Basic Books; 1995.
22. Spiegel B. *Love Medicine and Miracles*. New York, NY: Harper Row; 1988.