

Implications

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Healing by Design: Healing Gardens and Therapeutic Landscapes

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“Quality of life,” “well-being,” and “healing” are phrases that embody concepts being recognized with increasing importance in the 21st century. Healthcare costs are climbing. Also, in today’s culture we as individuals are having more demanded of each of us to meet expectations—ours, our family’s, and our employer’s/employee’s. Stress or associated illness can be an outcome. As a result, non-traditional alternatives are being considered as possible healthful options. This issue of *Implications* illustrates some not-so-new concepts that are gaining renewed acceptance as viable options for consideration.

Plant Usage in Healthcare: Past, Present, and Future

Within the last 20 years there has been renewed interest in the role of designed natural environments and health. However, the importance of natural environments to health is ancient. The use of the garden as a place for healing can be traced back to early Asian, Greek, and Roman cultures.

For example, the Chinese wrote the “Pen Ts’ao”—the oldest list of medicinal herbs known - on silk in 3000 B.C. The Greeks created healing temples for their gods. The temple for the god Aesclepius (god of healing) was built in pastoral settings with mineral springs, bathing pools, gymnasiums, and healing gardens. Here people would come to worship, lodge, recreate, and heal. In the 1st-century A.D., Dioscorides, a surgeon in the Roman Army, recorded the “De Materia Medica,” including 950 curative substances of which 650 are herbal. The manuscripts included drawings, descriptions, and medicinal qualities of plants, methods of preparations, and contraindications and warnings (Gerlach-Spriggs, et al., 1998).

Presently, hospitals and healthcare institutions often keep up extensive gardens and landscapes as an important part of healing. However, over the last 50 years with the rapid growth of medical technology and economic pressure, this ancient concept has been neglected. In the United States, healthcare reform has prompted our public officials and healthcare administrators to measure success by the length of time spent in the hospital (shorter being better) and the efficiency of service delivery (Beal, 2004).



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Despite a long history in healthcare, the effects of natural environments on health have only been recently systematically studied. Since the mid-1980s, an integrated approach to medicine has helped reawaken the belief that gardens can play a significant role in the healing process. Perhaps the best-documented study to date is that of surgical patients and their access to views to the outside world conducted by Roger Ulrich in 1984. This study demonstrated a relationship between the duration of hospitalization, pain medication usage, and the ability to view nature through a hospital window. Based on the findings of Ulrich's study, patients with access to a view recovered faster and needed less pain medication to do so—a winning outcome for both the patient and the facility.

Healthcare institutions are increasingly recognizing the need for exposure to natural environments within the context of healthcare. The Joint Commission for the Accreditation of Hospitals Organization (JCAHO) has stated, “Patients and visitors should have opportunities to connect with nature through outside spaces, plants, indoor atriums, and views from windows” (1999).

Unfortunately, most of our information regarding natural environments and healthcare is anecdotal. It remains difficult at present to make firm recommendations for the precise design of landscapes to promote health and healing. Also, the needs of specific patient populations are unknown. Does one design cure all, or are different designs needed for different conditions? Moreover, what features of the design might be positively influencing patient outcomes? These questions have gone unanswered.

Design Principles in Therapeutic Landscapes

An emerging area of research and design focus within landscape architecture has sought to address the relationship of designed natural environments to

health and healing. As landscape architecture increasingly addresses the interface between designed natural environments and health, confusion has developed regarding various terms applied to this concept.

“Healing gardens” is a term frequently applied to gardens designed to promote recovery from illness. “Healing,” within the context of healthcare, is a broad term, not necessarily referring to the cure from a given illness. Rather, healing is seen as an improvement in overall well-being that incorporates the spiritual as well as the physical.



Therapeutic landscape designed for people with vision loss, outside London, England.

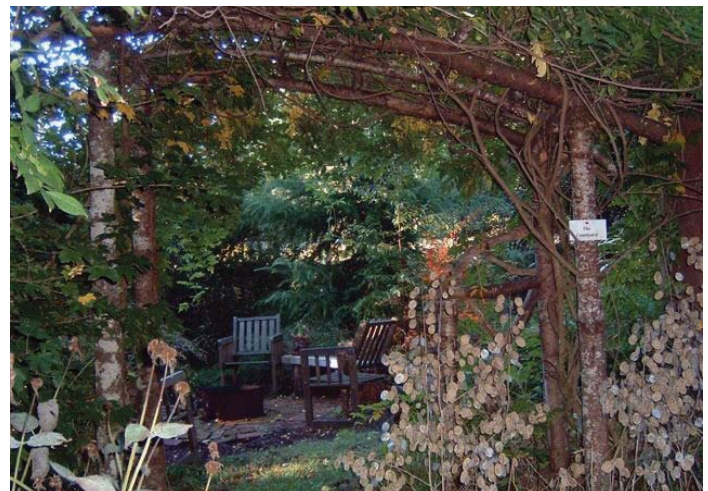
“Therapeutic Landscape Design” is more specific and relates to a particular aspect of a disease or healing process. The Therapeutic Landscape is designed to produce a given effect and measurable outcome upon a disease process within a given patient and/or group of patients. It can be thought of as similar to a medication taken for a specific disease or illness. The Therapeutic Landscape is thus less focused on healing in the spiritual context and more akin to the disease model of illness as practiced in most allopathic medical systems.

Numerous healthcare institutions within and outside the United States have begun to incorporate therapeutic landscape design. As Clare Cooper-Marcus and Marni Barnes have noted in their book *Healing Gardens: Therapeutic Benefits and Design Recommendations* (1999) these gardens focus on providing stress relief, alleviation of physical symptoms, and improvement in the overall sense of wellness for both patients and healthcare staff. Successful gardens include the following design principles:

- 1. Variety of Spaces:** Spaces for both group and solitary occupancy. By providing a variety of spaces, the patient is given choices, thus providing an increased sense of control leading to lower stress levels. An area for solitary occupancy allows one to “get away” from the sterilized environments of the hospital. Areas for small groups (e.g., family members or support staff) to congregate provide social support to the patient.
- 2. A Prevalence of Green Material:** Hardscaping is minimized and plant materials dominate the garden. The goal would be to minimize hardscaping to only one-third of the space being occupied. It is through the softening of the landscape patients can feel an improvement in their overall sense of wellness.
- 3. Encourage Exercise:** Gardens that encourage walking as a form of exercise have been correlated with lower levels of depression.
- 4. Provide Positive Distractions:** Natural distractions such as plants, flowers, and water features decrease stress levels. Other activities such as working with plants and gardening can also provide positive distractions in the garden setting.

5. Minimize Intrusions: Negative factors such as urban noise, smoke, and artificial lighting are minimized in the garden. Natural lighting and sounds are additive to the positive effects of the garden.

6. Minimize Ambiguity: Abstract environments (i.e., those with a high sense of mystery or complexity) can be interesting and challenging to the healthy, but to the ill they may have counter-indicated effects. Numerous studies show that abstraction in design is not well tolerated by persons who are ill or stressed. Clearly identifiable features and garden elements should be incorporated into the design. Abstract art in the facility and garden is often inappropriate.



Healing garden entrance with arbor at Cortesia's Healing Sanctuary in Oregon.

Design Elements in the Healing Garden

Whereas the Therapeutic Landscape Design is more specific and relates to a particular aspect of a disease or healing process within a given individual and/or group, the healing garden is a term frequently applied to gardens designed to promote improvement in overall well-being that incorporates the spiritual within the healing process.

In the book *The Sanctuary Garden* by C. Forrest McDowell and Tricia Clark-McDowell (1998), they say, "...the key to a (healing garden) is to honor and celebrate our broader human relationship with



Sitting bench at Cortesia's Healing Sanctuary in Oregon.

nature and spirit, not just plants." The McDowells proposed seven design elements as a guideline for design and as a means to identify the intention of the space, that is, a marriage between the garden keeper and the spirit of nature. The seven design elements are:

- A special entrance that invites and embraces the visitor into the garden
- The element of water for its psychological, spiritual, and physical effects
- A creative use of color and lighting (be they plant or human-designed light sources) to elicit emotion, comfort, and/or awe in the visitor
- The emphasis of natural features as grounding points, such as the use of rocks, wood, natural fences, screens, trellises, wind, sound, etc.
- The integration of art to enhance the overall mood/spirit of the garden
- Garden features that attract wildlife and provide habitat to a diversity of wildlife

Overall, the healing garden design should comfort the soul and renew the spirit—no matter if it consists of a bench next to a tree or an intricately designed landscape. Of greatest importance is the intention of honoring the design element and its relationship to the spirit of nature.

Definitions

Allopathic Medicine: theory of treatment that is based on germs causing disease. Allopathic treatment is a system that seeks to cure a disease by producing a condition different from or incompatible with the effects of the disease

Psychoneuroimmunology: focuses on the correlation between stress and health

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Healthcare Costs and Environmental Design

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Despite an increase in scientific research to support benefits of healing environmental design, few healthcare facilities seem to be inclined to include therapeutic gardens or any other access to nature in their remodeling or new construction design. In 2002, only 20% of hospitals include healing environmental factors in their construction plans (Bilchik, 2002).

However, evidence-based design supports therapeutic environments decreasing health care costs. For example, Derek Parker (1991) estimated the cost savings from better-built healing environments (i.e., with shorter stays, drug savings, and labor costs) at \$10 million per year for a 300-bed hospital. Parker's \$10 million estimate of the annual impact of a better-built healing environment could be upwards of \$15-\$20 million in today's dollars (Coile, 2002).

Also, in 1998, researchers at the Johns Hopkins University prepared a comprehensive review of 84 studies about the impact of the health care environment on patient outcomes. Results indicated that patients who were happier with their healthcare environment used fewer strong medications, were easier to care for, returned to their homes sooner, and recommended the hospital to others (Coile, 2002).

In the competitive market of healthcare the message is clear: it is to the advantage of the healthcare administrator to provide an environment that is welcoming to patients as it improves quality of life and supports families and employees, or else, suffer the economic consequences (Tieman, 2001).

"Healing by Design" Lecture Series

The Center for Spirituality and Healing (CSH; est. 1995), is charged with integrating complementary, cross-cultural and spiritual aspects of care into the education, research and clinical care programs of the University of Minnesota's Academic Health Center. This is accomplished by teaching healthcare professionals, students, and the greater community about the interconnectedness of body-mind-spirit and the vital role that world culture and spirituality play in achieving optimal health and well-being.

In February, 2005, the University of Minnesota will begin hosting a lecture series entitled *Healing by Design: Therapeutic Health Benefits through Landscape, Garden, and Interior Design*. Leading professionals will share their knowledge and insight generated from the fields of environmental psychology, neurosciences, medicine, therapeutic horticulture, clinical psychology, evolutionary biology, and psychoneuroimmunology. Presenters are Clare Cooper Marcus (2/17/05), Forrest McDowell and Tricia Clark-McDowell (5/11/05), and Jain Malkin (9/21/05). For more information on this lecture series go to:

<http://www.informedesign.umn.edu/Calendar.aspx>

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Additional Resources

—www.healinglandscapes.org

—www.ahta.org

—www.alexstark.com

—www.arboretum.umn.edu

—www.csh.umn.edu

About the Authors:



Steve Mitrione , MD, MLA, is a Family Physician with twenty years of clinical experience. Dr. Mitrione recently received his Master of Landscape Architecture from the University of Minnesota and is one of only two individuals in the United States to hold both degrees. His

focus is on the ways in which landscape and the designed environment can improve health and aid in the recovery from illness.



At the Minnesota Landscape Arboretum, **Jean Larson, MA, HTR, CTRS**, serves as the coordinator of Therapeutic Horticulture Services. She oversees training of professional staff in the principles of therapeutic horticulture, the implementation of therapeutic horticulture programs, and

community outreach. Ms. Larson is a faculty member at the CSH and serves as the center's healing garden consultant. She earned her MA in Therapeutic Recreation and Outdoor Education at the University of Minnesota in 1990 and is a certified therapeutic recreation specialist and registered in horticultural therapy.



As founder and director of the Center for Spirituality and Healing (CSH) at the University of Minnesota, **Mary Jo Kreitzer, Ph.D., RN**, brings more than 15 years of leadership and expertise to the field of complementary therapies and healing practices.

Currently, she is the principal investigator (PI) of a \$1.6 million National Institutes of Health (NCCAM) education grant; the co-PI of a five year \$2.1 million NIH (NINR) clinical trial of mindfulness meditation with solid organ transplant patients; and the PI on a Fetzer Institute funded evaluation of the Inner Life of Healers Program. Dr. Kreitzer is also a tenured associate professor in the School of Nursing.

Related Research Summaries

InformeDesign has many Research Summaries about healing, well-being, and related, pertinent topics. This knowledge will be valuable to you as you consider your next design solution and worth sharing with your clients and collaborators.

“Benefits of Restorative Environments”

—*Journal of Environmental Psychology*

“Influences of Favorite Places”

—*Environment and Behavior*

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“Health Benefits of Including Nature Within Hospitals” —*Journal of Environmental Psychology*

“Benefits of Urban Parks”
—*Landscape and Urban Planning*

“Influence of Meaningful Landscapes”
—*Landscape Journal*

“Creating Beneficial Urban and Natural Settings”
—*Journal of Environmental Psychology*

“Physical Features Facilitate Place Attachment”
—*Environment and Behavior*

“Mood and the Desire to Be in Nature”
—*Journal of Environmental Psychology*

“Alleviating Mental Fatigue in Urban and Natural Settings” —*Journal of Environmental Psychology*

“Naturalistic and Formal Urban Parks”
—*Landscape and Urban Planning*

“Health Benefits of Park Use Among Older Adults”
—*Journal of Leisure Research*

“The History and Future of Healthcare Spaces”
—*The Journal of Architecture*

“Healing Environments for Addiction Treatment”
—*The Journal of Alternative and Complementary Medicine*

“Pediatric Healing Gardens”
—*Landscape and Urban Planning*

“Natural Environmental and Transcendent Experiences” —*Journal of Environmental Psychology*

“Optimal Healing Environments for Cancer Patients” —*The Journal of Alternative and Complementary Medicine*

“Children's Favorite Places for Restoration”
—*Journal of Environmental Psychology*

Photos Courtesy of:

Jean Larson, Minnesota Landscape Arboretum
(p. 1 & 2)

Mary Jo Kreitzer, University of Minnesota (p. 3 & 4)

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