

Creating a healing environment: Rationale and research overview

■ ABSTRACT

The environment of care has been shown to reduce the burden of disease and shorten healing time across multiple medical conditions. Given that many diseases respond to the unexplained regulation of the autonomic nervous system, the mechanism of interplay between the environment and this regulation needs to be explored and addressed as part of health care delivery. Complementary and alternative medical practices can be blended with traditional evidence-based medicine to optimally promote a healing environment and overall patient well-being. This review outlines the rationale behind “blended medicine” and healing-oriented design of health care facilities, featuring examples and lessons learned from the North Hawaii Community Hospital.

It has long been known that the physical environment has important implications for the disease process. One of the first instances where the impact of one’s environmental surroundings on disease was appreciated was the discovery that hand washing and linen changes reduced rates of puerperal fever.¹ At the time, it must have seemed strange that the “bad humours” of childbed fever could be removed by bathing the physician’s hands and changing the linens of the mother. Now, however, we routinely accept that infection is a battle between ever-present microbes and the human immune system’s exposure to them via the physical environment.

Traditional medicine is only now recognizing the effect on the disease process of less measurable, non-physical factors such as stress. Many disease processes

have a well-established relationship with stress; examples include the relation between psychosocial stress and more rapid progression of Parkinson disease, as well as the “broken heart syndrome.” Studies of inner city children under stress due to violence or socioeconomic factors show that they have greater disease burdens and worse disease outcomes compared with less-stressed children. Many stressors, such as physical or emotional abuse, lifetime traumas, turmoil in the childhood family, and recent stressful life events, have implications for both disease and healing.² Similarly, the spiritual component of healing cannot be ignored, nor can the effect of a patient’s environment and aesthetic surroundings.

For these reasons, it makes sense to view health care as a comprehensive approach to combat all factors contributing to the disease process. The integration of all therapies—peaceful and comforting surroundings, stress reducers, caring health care providers, together with evidence-based medicine—creates a healing environment. This article presents an overview of this concept of comprehensively integrated therapies, with a focus on the role of the “healing environment,” or healing-oriented design and architecture, and provides examples and lessons from my institution, the North Hawaii Community Hospital.

■ ‘BLENDED MEDICINE’ AND HEALING

Many people refer to traditional medicine as “Western medicine.” Western medicine in the United States is evidence-based and, in most circumstances, validated by clinical trials. These therapies have either stood the test of time or been shown to have superior effectiveness in treating a given disease. Introducing and validating a new treatment, either via the US Food and Drug Administration (as is the case with pharmaceuticals) or within the medical community, can take considerable time and money.^{3–6}

“Blended medicine” involves the use of complementary and alternative medicine together with traditional medicine. Blended medicine techniques are not necessarily validated in large clinical trials, but

* Affiliation at the time of the 3rd Heart-Brain Summit. Dr. Geimer-Flanders is currently with the Division of Cardiology, Kona Community Hospital, Kealahou, HI.

Dr. Geimer-Flanders reported that she has no financial interests or relationships that pose a potential conflict of interest with this article.

doi:10.3949/ccjm.76.s2.13

blended medicine has been found to promote stress reduction, faster healing, decreased infection rates, staff and patient satisfaction, and the economic benefit of lower hospital operating costs.^{7,8}

Blended medicine recognizes the practical reality that healing usually relies on both traditional medicine and other components of care. It has been argued that high-tech treatment (eg, subspecialty care and advanced imaging) accounts for 20% of healing while “high-touch” treatment (complementary and alternative medical therapies) and a healing environment account for the remaining 80% (and that most treatment centers leave out this 80%).⁹ This third component—the environment—completes the triad of blended medicine.

Potential for improved outcomes

As early as the late 1980s, the treatment of heart disease came to recognize the beneficial effects of stress management, as demonstrated by recognition of the association between heart disease and the “type A” personality and its role in emotional expression.¹⁰ Back then, one of the few “alternative therapies” widely known in the West was meditation. Pharmacologic advances in the treatment of heart disease have improved outcomes exponentially. In preliminary studies, alternative therapies such as meditation have been shown to impact blood pressure and may prove effective in the treatment of hypertension and heart disease.^{11,12} Considering the outcomes of achieving the same treatment targets with blended medicine has provocative implications. For instance, if transcendental meditation results in a blood pressure goal of less than 130/80 mm Hg and a low-density lipoprotein cholesterol level of less than 70 mg/dL, what reason is there to believe that the outcomes would not match those of comparable pharmacologic manipulations of blood pressure and lipid levels?

■ HOLISTIC APPROACHES TO HEALING

For many acute illnesses, holistic approaches to healing are being used to augment traditional hospital care; such approaches exemplify the concept of blended medicine. Our experience at the North Hawaii Community Hospital has been that effective treatment of patients must include the ideology of holistic medicine: treating the body, mind, and spirit in the context of the patient’s culture and natural surroundings. We have found that complementary treatments that embody this holistic ideology yield benefits in terms of patient satisfaction. These therapies, some of which are covered by insurance,¹³ include the following:

Manipulation/massage—pressing, rubbing, and moving muscles and other soft tissues, primarily using the hands and fingers. The aim is to increase the flow of blood and oxygen to the massaged area. The use of therapeutic massage has demonstrated benefit in both adult and pediatric conditions.^{14,15}

Acupuncture therapy—a family of procedures that originated in traditional Chinese medicine. Acupuncture is the stimulation of specific points on the body by a variety of techniques, including the insertion of thin metal needles through the skin. It is intended to remove blockages in the flow of *qi*—a traditional Chinese concept that roughly translates to “energy flow” or “vitality”—and restore and maintain health.

Biofeedback—the use of electronic devices to help people learn to control body functions that are normally not consciously controlled (such as breathing or heart rate). The intent is to promote relaxation and improve health. One particular program, known as HeartMath[®], is a systematized program developed for heart patients.

Guided imagery—a gentle but powerful technique that focuses and directs the imagination. Although guided imagery has been called “visualization” and “mental imagery,” these terms are misleading, as the technique involves far more than just visual sense. Guided imagery involves all of the senses, and almost anyone can do it. It involves the whole body, the emotions, and all the senses, and it is precisely this body-based focus that makes for its powerful impact.

Naturopathy—a comprehensive medical system that originated in Europe and aims to support the body’s ability to heal itself through dietary and lifestyle changes together with other therapies such as herbs, massage, and joint manipulation. An example of its application in the hospital would be the use of ginger root for the treatment of nausea.

Healing touch or healing energy—a relaxing, nurturing energy therapy. Gentle touch assists in balancing physical, mental, emotional, and spiritual well-being. Healing touch works with the body’s energy field to support its natural ability to heal. It is safe for all ages and works in harmony with standard medical care.

Aroma therapy—the use of pure and natural essential oils, absolutes, floral waters, resins, carrier oils, infused oils, herbs, and other natural substances. The natural ingredients used in aromatherapy have specific medicinal uses; for example, ginger and peppermint can treat nausea.

Pet therapy. The comforting effects of animals have been noted through the years. For instance, Florence Nightingale recommended “a small pet animal”

as an “excellent companion for the sick.” A growing number of studies provide supportive evidence that these “huggable health care workers” truly help the healing process.¹⁶

Music therapy—the clinical and evidence-based use of music interventions to accomplish individualized goals (eg, stress management) within a therapeutic relationship. Programs exist for credentialing professional music therapists.

■ THE ROLE OF THE HEALING ENVIRONMENT

As noted above, part of holistic healing and blended medicine is the environment of care. Stress is an inherent part of the hospital experience and can serve to complicate a patient’s disease. The general appearance of a hospital’s rooms, grounds, and environment has important effects on patients.

Creating a patient-friendly environment is a challenge, especially since patients come in all sizes and from all cultures. A patient-friendly therapeutic environment for children arguably will be different from one designed for seniors. One unifying concept, however, is low-stress, high-comfort design. Research from the Center for Health Design has shown that the more attractive the environment, the higher the perceived quality of care and the lower the anxiety of patients. For example, there is a significant relationship between perceived wait times (which are affected by the pleasantness and aesthetics of waiting areas) and perceived quality/perceived anxiety.¹⁷ Patients underestimated longer (≥ 30 minutes) actual wait times and overestimated short (0 to 5 minutes) actual wait times. There was no significant relationship between actual wait times and perceived quality or perceived anxiety,¹⁷ suggesting that *perceived* wait times, which are influenced strongly by the physical design of the environment of care, are a more important determinant of patient satisfaction.

Research on the healing environment is proliferating

Research and industry efforts to promote healing through design are ongoing in a number of centers. The Pebble Project is a joint research effort between the Center for Health Design, a nonprofit research and advocacy organization, and selected health care providers.¹⁷ The project, launched in 2000, is charged with creating a ripple effect in the health care community to provide research and documented examples of health care facilities whose design has made a difference in the quality of care. Such design-related improvements in care also can translate into improved financial performance of the institution.¹⁷

The North Hawaii Community Hospital experience

The North Hawaii Community Hospital, built in 1996, has incorporated the healing environment into many aspects of its design. We had the advantage of being able to build the hospital with a therapeutic design that includes elements such as wide corridors that deliberately do not trigger the “fight or flight” response. The use of natural lighting, floor-to-ceiling windows, and skylights throughout the hospital helps to keep the patient in sync with respect to chronobiologic principles. Against the backdrop of architectural and design elements like these, care is delivered in a restorative, therapeutic environment based on holistic principles and cultural wisdom to create a total healing environment.¹⁸

Hospital building boom presents an opportunity

As our nation’s population ages, the US health care system is anticipating a hospital construction boom worth \$200 billion over the next decade.¹⁹ In California alone, new spending for hospital buildings was projected to exceed \$14 billion between 2002 and 2010.⁸ This represents a great opportunity: at this pivotal moment, hospitals leaders are discovering the role of complementary medicine and healing design in improving patient and community health. Evidence suggests that hospital adoption of design approaches that minimize ecological harm and maximize patient healing and staff satisfaction leads to measurable outcomes such as reductions in length of stay, use of pain medication, medical mistakes, and cost of care.^{7,20,21}

These findings should remind us that patient satisfaction is defined not only by clinical outcomes but also by the aesthetics of the hospital experience. Patients want a healthful, healing environment. It is not hard to predict patients’ preferences. They are similar to those that all of us share—for a comfortable environment and respect for our preferences and culture together with evidenced-based, high-tech diagnostics.

■ REMAINING QUESTIONS AND CONCLUSIONS

As the study of blended medicine and the healing environment advances, a number of questions loom before us:

- Will we find that hospitals are just warehouses for sick bodies and that the ideal healing environment may in fact be a spa, the patient’s home, or some yet-to-be discovered variation on the current hospital system?
- Are there some disease processes that are solely caused by stress, or rather by an exaggerated process of normal injury?

- Why do we not study the biochemical makeup of healthy individuals involved in the complementary and alternative medicine practices mentioned above?

- What are the mechanisms of recovery in stress-induced injury?

The answers to these questions will unquestionably be complex, but as the study of heart-brain medicine grows more widespread, research to provide insight into the intricacies of alternative therapies will increase. No doubt there will be evidence against some accepted modalities, as well as discovery of new ones. The key lies in the heart-brain relationship.

Given that many diseases respond to the unexplained regulation of the autonomic nervous system, the mechanism of interplay between environment and this regulation needs to be explored and addressed as part of health care delivery. Systematic documentation of findings and clinical trials on the supposed mechanisms are needed.²² Once complementary and alternative therapies are validated, they must be implemented into treatment in much the same way as we now use as-needed medications. Instruction in the role and implementation of blended medicine and the healing environment should be part of the curriculum in medical and nursing schools.

■ REFERENCES

1. Warrell DA, Cox TM, Firth JD, Benz EJ, eds. Oxford Textbook of Medicine. 4th ed. Oxford, UK: Oxford University Press; 2005.
2. Leserman J, Li Z, Hu YJ, Drossman DA. How multiple types of stressors impact on health. *Psychosom Med* 1998; 60:175–181.
3. Chaudhury H. Advantages and disadvantages of single- versus multiple-occupancy rooms in acute care environments. *Environ Behav* 2005; 37:760–786.
4. DiMasi JA, Hansen RW, Grabowski HG. The price of innovation: new estimates of drug development costs. *J Health Econ* 2003; 22:151–185.
5. Dobson R. Alternative therapies could save the NHS money, says report commissioned by Prince Charles. *BMJ* 2005; 331:795.
6. Daw J. Stress management improves cardiac health and saves money, study finds. *Monitor on Psychology*; March 2002. <http://www.apa.org/monitor/mar02/stressmgt.html>. Accessed June 27, 2008.
7. Milliken TF, Clements PT, Tillman HJ. The impact of stress management on nurse productivity and retention. *Nurs Econ* 2007; 25:203–210.
8. Ulrich RS. Health benefits of gardens in hospitals. Paper presented at: Plants for People International Exhibition Floriade 2002.
9. Bakken EE. The dream behind the summit. *Cleve Clin J Med* 2007; 74(suppl 1):S7.
10. Friedman HS, Booth-Kewley S. Personality, type A behavior, and coronary heart disease: the role of emotional expression. *J Pers Soc Psychol* 1987; 53:783–792.
11. Hankey A. Studies of advanced stages of meditation in the Tibetan Buddhist and Vedic traditions. I: A comparison of general changes. *Evid Based Complement Alternat Med* 2006; 3:513–521.
12. Eisenberg DM, Delbanco TL, Berkey CS, et al. Cognitive behavioral techniques for hypertension: are they effective? *Ann Intern Med* 1993; 118:964–972.
13. Hawaii State Consortium for Integrative Healthcare. Insurance coverage for complementary and alternative medicine (CAM) treatments for cancer patients (final report). <http://www.hawaiiconsortium.com/site/376/publications.aspx>. Accessed June 26, 2008.
14. Tsao JCL. CAM for pediatric pain: what is state-of-the-research? *Evid Based Complement Alternat Med* 2006; 3:143–144.
15. Tsao JCL. Effectiveness of massage therapy for chronic, non-malignant pain: a review. *Evid Based Complement Alternat Med* 2007; 4:165–179.
16. Soares C. Pet therapy: huggable healthcare workers. *Discovery Health Web site*. http://health.discovery.com/centers/aging/pet_therapy/pet_therapy_print.html. Accessed June 26, 2008.
17. The Pebble Project overview. The Center for Health Design Web site. <http://www.healthdesign.org/research/pebble/overview.php>. Accessed June 26, 2008.
18. Bakken E. Presentation at an American College of Cardiology meeting on integrated medicine. October 2003; Mauna Lani Resort, HI.
19. Designing the 21st century hospital. Robert Wood Johnson Foundation Web site. <http://www.rwjf.org>. Published June 2006.
20. Chaudhury H, Mahmood A; Center for Health Design CHER (Coalition for Health Environments Research) Research Committee. The effect of environmental design on reducing nursing and medication errors in acute care settings. http://www.healthdesign.org/research/reports/reducing_errors.php. Published November 2007. Accessed June 25, 2008.
21. Ikonomidou E, Rehnström A, Naesh O. Effect of music on vital signs and postoperative pain. *AORN J* 2004; 80:269–278.
22. Fonteyn M, Bauer-Wu S. Using qualitative evaluation in a feasibility study to improve and refine a complementary therapy intervention prior to subsequent research. *Complement Ther Clin Pract* 2005; 11:247–252.

Correspondence: Jone Geimer-Flanders, DO, Kona Community Hospital, Division of Cardiology, Ali'i Health, 79-1019 Haukapila Street, Kealahou, HI 96750; jgflanders@earthlink.net