

A Guide to Evidence-based Art 1

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A Guide to Evidence-based Art

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In the healthcare environment, art is often the most visible component of a space. Take a minute to visualize the floor or wall color in your dentist's office or doctor's waiting room. Can you? Now try envisioning the art in those very same places. If you are like most people, you probably remember the art much more than the paint, finishes, fabrics, or flooring.

In 2002, Harris, McBride, Ross, and Curtis conducted a study of six different hospitals owned by Intermountain Health Care, a not-for-profit provider in Utah. The purpose of the study was to determine to what extent, if any, environmental sources play a role in overall patient satisfaction with an in-bed hospitalization. A total of 380 inpatients were interviewed via telephone shortly after discharge and asked questions about six environmental sources of satisfaction and dissatisfaction inside the patient room and outside the patient room. The study found that hospital interior design features were the most common room features, and the second most common hospital features, mentioned by participants in the study (over other environmental elements such as architectural features, ambient environment, social features, remodeling/construction, or parking). Only maintenance outside the patient room received a higher score than interior design. Investigators noted that, in response to décor aspect, comments were often about the artwork in a room. For example, one respondent remarked, "It would be nice if they had more pictures."

The study concluded that satisfaction with the hospital environment is an important part of service quality. The physical environment is not a mere backdrop for healthcare delivery—it is an integral part of the hospital experience. Clearly, this study deals with art only as a response item of those participants to whom it was a significant part of the environment, but it makes a case for the importance of artwork and the need to invest in studies that can isolate the role of art in improving healthcare quality. In this paper, we will explore the different levels at which art can improve the quality of healthcare, share

experiences of creating effective art programs, and outline guidelines for incorporating appropriate art programs in healthcare settings.

INTRODUCTION TO ART PROGRAMS

Today, nearly 50% of all hospitals in the United States have arts programs. In 2003, the Society for the Arts in Healthcare (SAH) and the National Endowment for the Arts (NEA) undertook an analysis of Joint Commission -affiliated hospitals to determine the current level and characteristics of arts activities in healthcare (Wikoff, 2004). Even with the cost associated with arts programs, SAH and the NEA concluded that hospitals use the arts “to create a more uplifting environment” in addition to “create a welcoming atmosphere and build community relations.”

While an arts program may include both visual and performance art, of the 2,000 hospitals responding that they had art programs in place, 73% of those reported permanent displays of visual art in the hospital; 32% reported having rotating exhibits, typically art by local or regional artists. The study found that 96% of hospital arts programs were intended to “serve patients directly.” Benefit to patients was the primary reason (78.8%) given for having arts programs, noting them “specifically to be a part of their mental and emotional recovery (72.8 %).” The study also found that 25% of hospitals with arts programs allow patients an opportunity to choose their own art.

While patients and the public are the primary reasons to have arts programs, 55% of the programs surveyed also focus on the hospital staff as a way of reducing stress and burnout, which is a monumental problem for hospitals.

Reports of successful art programs abound. Northwestern Memorial Hospital in Chicago built a 2 million square-foot replacement hospital in 1999. The collection of 1,600 works of art has been used in the hospital’s marketing program, has been the subject of a master’s thesis at the Art Institute of Chicago, and has been cited as one of only five exemplary art programs by the Center for Health Design (McKeever, 2000). M. D.

Anderson Cancer Center, Houston, TX, is yet another example of a successful art program with a measurable impact on patient and staff satisfaction, which is discussed later on in this paper.

In a \$41 billion healthcare construction industry, by a conservative estimate, \$2 billion will be spent on art for new hospital construction this year. Yet despite the obvious support for art in the healthcare setting, finding resources for information on how to create a successful and empathetic art program is difficult. However, what does exist is a robust body of evidence on appropriate content for healthcare art and the importance of nature images. In fact, the evidence makes a strong case that art is a critical component of the healthcare environment, which can aid the healing process. In this paper we concentrate on visual art.

The majority of healthcare art programs, dealing with the visual art display, are created and administered by art consultants hired by either a facility or the facility's architect or interior designer. The hiring process usually involves a request for proposal issued by a formal art committee. While other characteristics can be attractive to hospitals hiring a consultant, the single most important credential for selecting an art consultant seems to be in-depth experience in healthcare. Like the design of a hospital itself, designing and producing a comprehensive healthcare art program is challenging and complex, especially since many facilities are including evidence-based design principles in their projects. The following section is an introduction to the evidence-based approach and an overview of the existing evidence on the impact of visual art on healing.

ART AND HEALING

In the *Biological Origins of Art*, Aiken (1998) makes a scientific as well as philosophical argument for the emotional impact of art and its importance to humankind's survival as a species. Art has been an integral component of human evolution, both as a species and as a society. Visual art can be traced as far back as the Paleolithic man's cave art and continues to be an integral part of people's lives. It's a small wonder then, that the use of art in hospitals dates back to the 14th century, when they were church operated.

However, at that time, dying parishioners were more likely to be subjected to paintings depicting salvation (or damnation) as a way of offering sinners a last chance at redemption, in contrast to the soothing landscapes of the typical healthcare setting today. Perhaps the most prominent pre-cursor to the art initiative in hospitals today is Florence Nightingale's *Notes for Nursing* ([1860], 1969) describing the patients' need for beauty and making the argument that the effect of beauty is not only on the mind, but on the body as well.

Since then, art has continued to have a presence in the healthcare environment. During the Depression, artists were put to work painting murals in U.S. hospitals. In the 1970s and 1980s, hospitals in the United States began to decorate with art, but without particular consideration to the therapeutic benefit of art. The early 1990s saw a new interest in therapeutic environments, which emphasized art that was intended to contribute more than decorative value to the hospital environment.

Today, there is yet another shift to more rigorous evidence-based design, which is both the process and product of scientific analysis of healthcare environments (Hamilton, 2003). In the context of art, this refers to the process and product of scientific analysis of the impact of art in healthcare environments, on patients, and on caregivers. This implies that art interventions must not only base decisions on the best available research findings, but also commit to the process of generating new evidence-based ideas on these interventions.

According to Ulrich and Gilpin (2003), within the healthcare environment, the important outcomes relevant to arts-health research are the health outcomes, which include:

- clinical indicators (observable signs and symptoms related to patient conditions such as length of hospital stay, intake of pain medication, or biological markers such as blood pressure and heart rate),
- patient/staff/family-based outcomes (patient ratings of perceived pain, satisfaction with healthcare services, staff-reported satisfaction, etc.), and
- economic outcomes: (cost of patient care or cost related to nursing turnover, etc.).

Focusing on the above outcomes allows the development of an evidence base that can guide best practices for creating therapeutic art programs. Before addressing the existing research on this subject, it is important to broaden the definition of visual art to include traditional 2D and 3D works, as well as digital art and virtual reality (VR). In the medical community, art interventions are often used as positive distractions for patients.

Distraction here refers to “the direction of attention to a non-toxious event or stimulus in the immediate environment” (Fernandez, 1986; Vessey, Carlson, & McGill, 1994).

For example, adult patients in a procedure room reported better pain control when exposed to a nature scene with nature sound in the ceiling (Diette, Lechtzin, Haponik, Devrotes, & Rubin, 2003). Murals (as distraction) resulted in a significant decrease in reported pain intensity, pain quality, and anxiety by burn patients (Miller, Hickman, & Lemasters, 1992). Breast cancer patients reported reduced anxiety, fatigue, and distress during chemotherapy when exposed to VR intervention displaying underwater scenes (Schneider, Ellis, Coombs, Shonkwiler, & Folsom, 2003).

A similar finding was made when patients were asked to enter a virtual environment by playing video games or wearing a headset (Hoffman, Patterson, Carrouger, & Sharar, 2001). In a 2002 study at the Hong Kong Polytechnic University, researchers found that, with the use of visual stimuli (soundless nature video), there was a significant increase in pain threshold and pain tolerance (Tse, Ng, Chung, & Wong, 2002). In a 2003 single-case design (Gershon, Zimand, Lemos, Rothbaum, & Hodges, 2003), researchers found that VR was effective in reducing anxiety and perception of pain from the port access process of an 8-year-old patient with acute lymphocytic leukemia.

Art has also been seen to have stress-reducing effects. Evidence from heart-rate recordings and questionnaires showed that stress in a dental clinic was appreciably lower on days when a large mural was hung at the back of a waiting room (Heerwagen, 1990). In another study, images of serene nature scenes mounted to the ceiling were shown to highly stressed pre-surgical patients on gurneys; this resulted in lower blood pressure

(Coss, 1990). While it has become increasingly common to use art interventions to distract patients from their pain or stress, there is only a small, critical body of work on the appropriate image content used for such interventions.

According to Ulrich and Gilpin (2003, p.123), research suggests that nature art (or art with views or representations of nature) will promote restoration if “it contains the following features: calm or slowly moving water, verdant foliage, flowers, foreground spatial openness, park-like or Savannah-like properties (scattered trees, grassy undershot), and birds or other unthreatening wildlife.” Ulrich and Gilpin (2003) also suggest that, in addition to nature art, humans are genetically predisposed to notice, and be positively effected by, smiling or sympathetic human faces.

Ulrich has substantiated the above claim with respect to nature art with a preponderance of evidence on how access to nature (even nature in art) affects patients. In a landmark study published in 1984, Ulrich found that postoperative gall-bladder surgery patients whose rooms had windows with views of a park had better outcomes than those patients whose rooms had windows with views of a brick wall. Patients complained less to staff, needed analgesic pain medication of lesser strength, and were discharged earlier (Ulrich, 1984).

In a study with postoperative heart patients in Sweden (Ulrich, Lunden, and Eltinge, 1993), it was found that exposing heart-surgery patients in intensive care units to nature pictures improved outcomes. On the other hand, patients reacted in a strongly negative manner to abstract art. In 1991, Ulrich also conducted a significant study of psychiatric patients’ response to art. The unit was extensively furnished with a diverse collection of wall-mounted paintings and prints. Interviews with patients indicated strongly negative reaction to artwork that was ambiguous, surreal, or could be interpreted in multiple ways. The same patients, however, reported having positive feelings and associations with respect to nature paintings and prints (Ulrich, 1991). It is evident, based on these studies, that it is risky to place in a hospital art that is ambiguous, subject to interpretation, or that has obvious negative connotations. Because, when viewers are stressed or in a negative

emotional state, which they often are in a healthcare setting, they are likely to respond in a negative manner to art that they cannot understand or that contains negative images or icons.

While Ulrich's work in art research is the most comprehensive to date, there have been other significant contributions to the field of art for healthcare. Carpman and Grant (1993), working at the University of Michigan Medical Center in Ann Arbor, concluded that patients preferred art depicting nature over scenes with urban content, pictures of people, architectural interiors, still-life, sport scenes, or abstractions. (The study was an interview format involving nearly 300 inpatients with varying backgrounds, illnesses, and lengths of stays.)

Hathorn and Nanda (2006) conducted an art preference study with inpatients in St. Luke's Episcopal Hospital in Houston, TX, and found that patients preferred nature scenes and representative images to stylized or abstract art, even when the latter were rated as bestsellers by different online art vendors. The study is yet another indicator that high quality art, or even popular art, is not always appropriate art for healthcare settings. The study also showed that abstract images were not preferred, but generated more comments from patients. This indicates that evocative art is not synonymous with preferred art or, (one can hypothesize), restorative art.



Fig1. Highest Ranking Image for Hospital In-patients
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In another preference study Eisen (2005) showed that children in hospital settings also prefer representational nature art to abstract art. In fact, contrary to common assumptions that children only like large cartoon-like or fantasy images, a study with patients at Memorial Hermann Hospital in Houston, TX, showed that children highly rate nature images with bright colors, water features, and non-threatening wildlife (Nanda, Hathorn, Chanaud, & Brown, 2007). In fact, nature images rated higher than typical child art (art created by children) for children in the age group of 7 to 17. The younger children (between 5 to 7) ranked child art highly. This indicates differences in preferences of younger and older children, which should be taken into account while designing pediatric facilities. Within Nature images, images that were not vibrant or signified solitude were not rated highly. For children, it seems, the social and sensory component of an image is equally important.

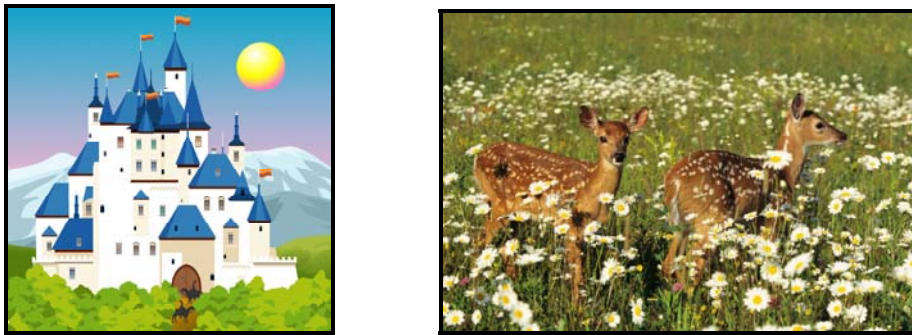


Fig 2. Highest Ranking Images for Pediatric Patients

An area where more investigation is warranted in a growingly diverse population is the role of ethnicity on art preferences. Cultural preferences for figurative art in the healthcare environment is another area that deserves study and could yield highly important information, particularly in terms of patient perception of care and overall satisfaction. In a small preliminary survey in 1999 in a large urban Mid-western hospital, Hathorn and Ulrich (2001) found that Caucasians' and African-Americans' responses to figurative art depicting caring faces and positive body language were the same. Results also showed that both groups preferred representational paintings of nature landscapes and rural areas that showed spatially open settings in clear, sunny weather, with water

features and verdant vegetation. Paintings of gardens with flowers were also rated as appropriate.

THEORETICAL FOUNDATION FOR THE APPROPRIATENESS OF NATURE IMAGES IN HEALING ART

Ulrich and Gilpin (2003) suggest that the foundation for contemporary research on the impact of visual art on healing and the benefit of nature images lies in the two basic theories: evolutionary theory and emotional congruence. Evolutionary theory holds that humankind's evolutionary survival skills in a natural world have hardwired humans to find nature calming and restorative. Emotional congruence suggests people perceive their emotional state in a manner congruent with their current emotional state. In a hospital environment, it is likely that the high stress that patients and staff are under influences their responses to the art.

Richard Coss, who began his research in the 1960s, is generally credited as the first researcher to advance the theory that humans respond to art on an evolutionary level as well as an intellectual or aesthetic level. Wilson (1984), a Harvard University researcher, coined the term *biophilia*, meaning "the tendency to focus on life and life-like processes." In other words, in survival of the species, humans have developed an affinity for the natural world that has sustained them.

The savannah hypothesis by the behavioral ecologist G. H. Orians suggests that, because human evolution took place in the savannahs in Africa, human beings prefer similar types of landscapes, characterized by expanses of grass and dotted with isolated or clumps of trees (Thompson, 2000). Looking at the earliest African ancestors, Orians theorized that those individuals who chose to live in environments that would afford sustenance, shelter, and protection were most likely to procreate and survive. Ancient savannah landscape, with clear views and topographic changes to see approaching danger, water, and plants for food, and canopied trees for shade, now seems to produce a restorative state and emotional well-being in modern humans when it is depicted in art. From an evolutionary

process, people are drawn to those same natural images in art today that represented shelter and protection to their ancestors.

Other scholars, such as Appleton (1975) and Kaplan and Kaplan (1989) have also investigated landscape preferences within an evolutionary framework. In addition to the preference for natural landscapes, Ulrich and Gilpin (2003) cite previous works by Ulrich (1993), Coss (1968), and Orians (1986) to stress how evolutionary theory is an indicator of subject matter that should be avoided, especially for highly stressed patients. These include natural elements and situations that may be perceived as dangerous or threatening such as snakes and spiders, reptilian-like tessellated patterns, large mammals staring straight at the viewers, and angry or scary human faces.

Another theory that supports the use of nature art for healing is the emotional congruence theory. Emotional-congruent or mood-congruent processing causes a person's mood to sensitize the person to take in mainly information that agrees with his/her mood (Bower, 1981). This implies that in a stressful situation (such as being a patient in a hospital) negative emotions are likely to be projected on to the surrounding environment. In the context of healthcare environments where both patients and staff are under emotional stress, this implies that ambiguous or detrimental visual elements (including art) may have emotionally, and even physiologically, harmful effects. In the context of art, this makes the popular use of abstract or ambiguous art a possible threat to the well-being of both patients and caregivers. This also explains the adverse reaction to abstract or ambiguous art described in various research studies cited above.

A couple of other theories that could potentially explain the appropriateness of nature images and realistic, non-threatening images of figurative and animal scenes are also worth mentioning. According to the attention restoration theory (Kaplan & Kaplan, 1989), nature images help in restoration from directed attention, which is a stressful activity in itself, by offering the following components: being away (e.g., for people in a city center, nature images connote the opportunity to get away to an idyllic place), fascination (nature is endowed with various features that are fascinating and can hold a

viewer's attention without particular effort), extent (a sense of extent can come from scenes of distant wilderness, trails and paths leading to idyllic destinations, and a sense of being connected to a larger world), and compatibility (a resonance between the natural setting and human inclinations).

Nature images can be, in fact, aesthetically more appealing in hospital settings in the context of the processing fluency theory. According to the processing fluency theory (Reber, Schwarz, & Winkielman, 2004), aesthetic experience is a function of the perceiver's processing dynamics: The more fluently the perceiver can process an object, the more positive is his or her aesthetic response. Nature art, owing to its familiarity, could potentially lend itself to more fluent visual processing by a perceiver, especially in a high-stress environment.

GUIDELINES FOR ART SELECTION AND ART PLACEMENT

Based on an extensive body of both scientific studies and anecdotal accounts, Ulrich and Gilpin (2003) have developed the following guidelines for appropriate art content in healthcare settings:

Waterscapes:

calm or nonturbulent water

Landscapes:

visual depth or open foreground

trees with broad canopy

savannah landscapes

verdant vegetation

positive cultural artifacts (e.g., barns and older houses)

Flowers:

healthy and fresh

familiar

gardens with open foreground

Figurative art:

emotionally positive faces
diverse
leisurely

Three aspects of art need to be taken into consideration for healing environments, in addition to incorporating the above guidelines for art content (Hathorn, 1998), the:

- Location of artwork (considering where the artwork is going to be located and how it can be the most effective in enhancing the physical environment and developing a healing atmosphere).
- Needs of special patient populations (evaluating the unique needs of the kind of patients who will view the artwork. For example, art for pediatrics may differ from art for palliative care. This is discussed further in the next section.).
- Role of demographics in the healing environment (considering the ethnic, gender, and age makeup of the location of artwork and choosing art accordingly.).

Unfortunately, the evidence base on these three aspects is very thin (an issue that is taken up later in the next section). However, sensitivity to these issues is important in making decisions on art, rather than following the guidelines outside of an appropriate context.

In addition to these three aspects, placement of art should also take into consideration the sightlines of patients. For example, mammography is done one breast at a time and women are repositioned accordingly. This creates limitations in terms of the lines of sight, which must be taken into consideration. If possible, it is recommended to use two pictures, one for each line of view. For MRI and CT scans, for which patients have to lie on their backs, art on the ceiling or large enough to fill the patients' view is advisable (Hathorn, 1998).

Art size, placement, and spatial relationships in the healthcare setting have not been studied in a scientific manner. Jokes about art being installed by the tallest man in the engineering department aside, there are no real guidelines as to how visual order versus

visual clutter relating to art impacts users of a hospital. Art mounted at an appropriate viewing height and distance from other art compared to art mounted too high, too low, or at alternating heights anecdotally has a more positive experiential value for the viewer. To what extent this condition effects perception is unknown; however, it is reasonable to assume that poorly arranged and mounted art would contribute to overall environmental stress in a hospital. In the following section, we will discuss what is lacking in the existing evidence base that needs to be addressed.

NEED TO EXTEND THE EVIDENCE BASE IN HEALTHCARE ART

A strong evidence base, supported by robust theoretical frameworks, is now in place with respect to the benefits of nature and representational images over ambiguous and abstract images. There are many questions that are yet to be answered, however.

For example, there is very little investigation on different kinds of abstract art and the role of elements such as color, form, and composition. Within nature images, there are guidelines in place for the general patient population, but not much on specific patient populations. Hathorn (1998) discusses some anecdotal evidence arguing against the one-size-fits-all approach.

A case in point is using images of water that traditionally have strong positive connotations of relaxation associated with them, however, they would be excruciatingly inappropriate in numerous radiology areas where many procedures must be performed with the patient's bladder full and may last from 10 minutes, as in an ultrasound, up to three hours, as in a renal scan. Similarly, using impressionistic images in areas where patients may have vision problems or using images of food in areas where patients may be fasting would seem inappropriate. These determinations can be made by using commonsense, with a sensitivity toward the specific patient needs, but no study is in place that validates these intuitive guidelines.

Furthermore, little is known about the types of art subject matter that is most supportive for elderly patients. The role of figurative art, especially images of children, depiction of cultural differences, and typical nature scenes such as the savannah landscape, may not be as appropriate for nursing home and long-term care residents, as they are for outpatients or short-term inpatients in a hospital setting. The savannah image, for example, may be associated with escape and solitude for a short period of time, but may appear remote, empty, and lonely to those who are viewing the image for an extended period of time. A pilot study conducted with a long-term care facility in San Francisco shows that this is indeed the case, and a more focused investigation of the issues, especially given the growing geriatric population, is needed.

Investigating issues of content, composition, and color with respect to variables such as culture, age, ailment, cognitive function, and length of stay, are now warranted to enable the growth of the existing evidence base and make informed design decisions based upon them. In addition to the appropriate content of art, investigation on the role of art placement is also warranted. Patients are often supine, or have a limited line of sight, which must be taken into consideration. Efficacy of art interventions with respect to placement, location, and size of artwork must be further investigated to develop thorough guidelines.

Finally, there is a substantial scope to investigate the role of art in reducing perception of wait time, enhancing wayfinding, allowing greater comprehension and compliance with medical procedures, fostering patient-caregiver-staff relationships, and much more. But the first step toward developing a more robust evidence base for art in healthcare is to (a) make conscientious use of existing research in designing an art program and (b) commit to evaluating the impact of implemented art programs on patients and staff. In effect, this is what defines best practice in evidence-based art.

MAYS CLINIC, M. D. ANDERSON CANCER CENTER: A CASE STUDY ON BEST PRACTICE IN EVIDENCE-BASED ART



Fig 3. Left: The “Tree of Life” in the Lobby, Mays Clinic
Right: First Floor Vestibule, Mays Clinic

In 2002, the University of Texas M. D. Anderson Cancer Center recognized the need to change the fundamentals of its art program from an art-for-art’s-sake approach to an evidence-based one; one that used previous research to determine appropriate art content for patients and staff in the hospital. The approach also committed to evaluating the results of any art intervention and collecting evidence on the effectiveness of the art intervention that was implemented. American Art Resources was given the responsibility to implement an art program based on guidelines developed from previous research, toward the following goals:

- create a healing and hopeful environment
- relieve stresses associated with a healthcare environment
- reflect and enhance image developed through design and architecture
- address a culturally and regionally diverse population
- accommodate needs of special patient populations
- reflect overall standard of excellence

Toward these objectives and based on previous research, the following art selection criteria were developed:

- landscapes (regional, generic, or seasonal)
- positive fall and winter landscapes
- waterscapes (regional, generic, or seasonal)
- floral (familiar flowers, garden/bouquet style)
- flowers in vases (used sparingly for variety)
- figurative (observational rather than interpersonal, people in positive relaxed nature surroundings)
- Still-life (used sparingly for variety)

The art selection criteria developed were implemented in the Mays Clinic at M.D.Anderson. The Mays clinic is the new 780,000 sq.ft. ambulatory care building of the cancer center, offering outpatient care and services. In February 2007, a post-occupancy evaluation of the implemented art program was undertaken by the authors of this paper to understand the effectiveness of the applied guidelines and the need to change based on user feedback. Five units were identified to conduct the surveys with the patients and visitors: radiation/oncology, breast imaging, CT-imaging, MRI and outpatient, and diagnostic. Each of these clinics hosted artwork that adhered to one or more of the art criteria. An onsite questionnaire was administered with 210 patients and visitors, and an online questionnaire was administered with 240 staff members.

Ninety percent of patients and visitors thought the artwork in the Mays Clinic, overall, was good (36%) or very good (54%). The average rating on a scale of 1 (terrible) to 5 (very good) was 4.35, and highly significant statistically. Eighty-four percent of patients and visitors thought the artwork in the Mays Clinic, overall, made them feel much better (15%) or better (68.5%). The average rating on a scale of 1 (much worse) to 5 (much better) was 3.98, and statistically significant. When asked about the role of art, patients and visitors mentioned that art served as a distraction, made the hospital deinstitutionalized, gave comfort, was cheering and uplifting, helped get rid of anxiety, and contributed to the perception of the overall quality of care. Of the total comments,

89% were positive and 9% were negative. Some of the criticisms included that the art was too serene and not challenging enough. While there were various suggestions on additions to the art program, the overall response was that the art was appropriate and should not be changed thematically.

Fifty-one percent of staff thought the artwork in the Mays Clinic, overall, was good (31%) or very good (20%). The average rating on a scale of 1 (terrible) to 5 (very good) was 3.96, and statistically significant. Sixty-nine percent of the staff thought the artwork in the Mays Clinic, overall, made them feel much better (22%) or better (47%). The average rating on a scale of 1 (much worse) to 5 (much better) was 3.93, and statistically significant. When asked about how appropriate the staff thought the artwork in the Mays Clinic was for the patients, 97% of the staff thought the art was highly appropriate (56%) or moderately appropriate (41%).

Staff were also asked to rate the artwork in the patient areas of their own units. Sixty-seven percent of the staff thought that the art in the waiting rooms of their units was very good (31%) or good (36%). The average rating on scale of 1 (terrible) to 5 (very good) was 3.67. Fifty-two percent of the staff said that patients and visitors often comment about the artwork in the units they work in and ask about them. The staff gave many positive comments about the role of art in the facility. These included serving as a distraction for patients; setting the mood; promoting conversation among patients; inspiring trust; deinstitutionalizing the hospital; affording an escape from immediate surroundings; and being soothing, relaxing, and comforting. Seventy-nine percent of the total comments on the art were positive and 7% were negative comments. Some of the criticisms included that the art was not inspiring enough and should be challenging instead of soothing, for patients who needed motivation.

Overall, both the quality of the artwork and the emotional/healing effect of the art were rated positive. Also, the rate of response was indicative of an involvement in art by all the users, which is significant. Finally, it is important to note certain themes that were emergent from the qualitative data in the post-occupancy evaluation about the role of art.

- Healing: Art makes patients and staff feel better.
- Positive distraction: Art allows patients and visitors to focus on something other than their (and the surrounding people's) condition.
- Branding: Art improves the perception of care at the hospital and serves as an element that users identify with.
- Deinstitutionalization: Art makes the hospital less intimidating.
- De-stressor: Patients, visitors, and staff use favorite pieces of art to destress; this is particularly true for the staff.
- Way-finding: Prominent pieces of art serve as landmarks for patients and visitors.

The Mays clinic case study is an example of basing design decisions on best available evidence and then evaluating the success of the implemented design decisions. While the tools used (onsite and online surveys) are basic, they form the foundation for best practice ethics. Based on this study, a more focused research project can be undertaken and more sophisticated design guidelines can be developed.

A NOTE ON ART CARTS

Primarily, art programs focus on the more public areas of the hospital—lobbies, reception areas, waiting rooms, and procedure rooms—that witness high traffic. Often patient rooms are more neglected, with the artwork in patient rooms relegated to a small area on the wall, with little attention to the content. Yet, it is this wall that patients stare at endlessly while they are bedridden. This is why art carts, a service providing patients with a choice of art for their rooms, have gained popularity in recent years.

Art carts have been around for at least a decade. They offer patients alternatives to the art that is permanently mounted in the rooms. Typically a hospital employee or volunteer will roll in a cart containing various pieces of art, and ask the patients to choose the art they would like to hang in their rooms. While there has been some general speculation among healthcare professionals that giving patients the ability to choose their artwork and

interact with the person who is delivering the art (often, a caring volunteer) is a highly beneficial value of art carts, there is very little literature that studies the art cart program.

To find out more about art carts, the authors of this paper conducted a pilot project with St. Luke's Episcopal Hospital, Houston, TX. One of the oldest art cart programs in the country, the art cart at St. Luke's started in 1993 with a meager collection of 50 16 X 20 posters donated by Eastman Kodak. Today, the collection has grown to more than 600 works and six volunteers. Volunteers load the art cart with 20 pictures at a time and take them to various floors. Given issues of maneuverability and infection control, the cart is no longer wheeled into each room. However, volunteers ask patients for their preferences and select a few pieces of art from the art cart to allow patients a choice in art selection for their walls. After a three-week participant observation and interviews with volunteers, it was found that:

- Pictures become a means for patients to interact with volunteers and thus provide social support.
- Choice in paintings gives patients, however fleeting, a perceived sense of control.
- Patients explore the narrative scope in paintings and make stories around the pictures to discuss with friends and family. This is true for caregivers as well.
- On occasion, patients have extreme reactions to pictures they don't like, such as covering it up with a newspaper or cloth. Mostly, however, they appreciate the artwork and welcome the change and the choice offered by the art cart.
- Landscapes, non-threatening animals, and flowers are popular with patients as well as volunteers.
- Patients appreciate the service and make positive comments of the quality of care at St. Luke's. It is a service that comes as a pleasant surprise to them.
- Volunteers have their own unique methods of approaching patients and selecting artwork. This selection is by and large sensitive to patient preferences; however, an orientation about the existing evidence base on art could be helpful.

It is interesting to note that a small intervention such as the art cart program embodies the principles of supportive design (Ulrich, 2001) by being not only a positive distraction, but

also providing social support and a sense of control¹. Art is not just a sight for sore eyes, but for a sore body and mind.

SOME FINAL THOUGHTS BY KATHY HATHORN

In 2001, I watched by my mother die at the age of 91. Racked with pain and unable to speak virtually all day, she looked at the picture at the foot of her bed and said, “That’s such a pretty picture.” She said it not once, but twice that afternoon. The image, with its winding path and rays of sunlight filtering through the trees, obviously meant something to her and seemed to give her comfort. Art has the ability to touch us deeply, and profoundly, in our most vulnerable moments. It serves as a focal point in the environment that we are confined in, which can offer an emotional escape. We are often quick to dismiss such a minute part of the environment, yet, when the patient scans around his or her surroundings, it is this focal point that often the eyes, and the mind, rest upon. It is up to us, as designers, to make this rest restorative.

¹ Anecdotally, it is interesting to note that, when M. D. Anderson Cancer Center replaced its hodgepodge room art with savannah landscapes, there was a noticeable decrease in requests from patients to change the art in their rooms from different selections on the art cart (Hathorn, 2001).

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