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Suzanne E. McReynolds
Cedarville University, suzannemcreynolds@cedarville.edu

Carissa E. Leitch
Cedarville University, cleitch@cedarville.edu

Meredith G. Knowland
Cedarville University, meredithknowland@cedarville.edu

Caroline A. Wills
Cedarville University, cwills@cedarville.edu

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The Therapeutic Effects of Nature, Urban, or Standard Hospital Decorations on a Hospitalized Patient

Meredith Knowland, Carissa Leitch, Suzanne McReynolds, & Caroline Wills
Cedarville University School of Nursing

PATIENT CARE ISSUE

- 36,564,886 admissions to all U.S. hospitals registered with AHA in 2011.¹
- Average length of stay during a hospital admission is 4.8 days.²
- Pain, stress level, healing time, and mood have been identified as significant factors in patients' overall outcomes. Altering these factors using nature as a non-pharmacological, therapeutic source may improve patient outcomes.

¹ "Fast Facts on US Hospitals." *American Hospital Association*. Health Forum LLC, 3 Jan 2013. Web. 1 Nov 2013. <http://www.aha.org/research/rc/stat-studies/fast-facts.shtml>.

² "Hospitalization Utilization (in non-Federal short-stay hospitals)." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 5 Apr 2013. Web. 1 Nov 2013. <http://www.cdc.gov/nchs/fastats/hospital.htm>.

EVIDENCE-BASED PRACTICE QUESTION

Question: What is the difference in the therapeutic effects of nature, urban, or standard hospital decorations on hospitalized patients pain level, stress level, healing time, and mood?

P – Hospitalized patients

I – Hospital environment

C – Standard vs. urban vs. nature setting

O – Stress, pain level, healing time, and mood

REGISTERED NURSE INTERVIEW

- Interviewed staff nurse at Dayton Children's Medical Center
- Stated there are differences between nature's use in long-term and short-term patients
 - Little effort is made to expose short-term patients to nature
 - Long-term patients are encouraged to go outside if possible

METHODS

- **Databases:** Pub Med, Ebsco, Medline, and OneSearch
- **Key words:** Nature, nature in hospitals, gardens, hospital gardens, gardens in hospitals, scenery, hospital scenery, plants, and plants in hospitals
- **Inclusion material:** Articles published between 2008 and 2013, focused on nature's effects on patients and applicable to an inpatient setting.
- **Exclusion material:** Articles that did not address one of our four main factors, failed to meet one or more of our inclusion criteria, or were inaccessible to our databases.

LIMITATIONS

- There is limited data on healing time and mood in relation to nature.
- The landmark study, which is the most in depth study, was done by Ulrich in 1984 and some data may not be as relevant today due to significant hospital changes in decoration and atmosphere.

RESULTS

Database	Date of Search	Keywords	Articles Used in Review
OneSearch	09/14/2-13	Hospital Gardens	1
Medline	09/08-14/2013	Scenery, Hospital Landscape	3
Ebsco	09/08-14/2013	Scenery, Hospitals Gardens, Hospital Landscape	3
Pub Med	09/14/2013	Gardens, Gardens in Hospitals, Nature, Nature in Hospitals, Plants, Plants in Hospitals	4

SYNTHESIS OF EVIDENCE

- Nature reduces stress more than urban or standard hospital decorations
 - Supported in all eight studies evaluated^{1, 2, 3, 4, 5, 6, 7, 8}
 - Most researched therapeutic effect of nature
 - Preliminary studies show a weak, negative correlation between the level of stress and the amount of natural aspects that more studies may be able to further verify.¹
- Nature decreases pain level more than urban or standard hospital decorations
 - Supported in all seven studies evaluated^{1, 3, 5, 6, 8, 9, 10}
 - Different types of nature can have statistically significant differences in the amount of pain reduction¹
- Nature decreases healing time more than urban or standard hospital decorations
 - Supported in the two studies evaluated^{5, 12}
 - Least researched therapeutic effect of nature
 - Shown to reduce healing time by almost a full day¹²
- Nature increases positive mood more than urban or standard hospital decorations
 - Supported in three of the four studies evaluated^{6, 10, 11, 12}
 - Positive mood has been shown to alter the outcome of diseases and surgeries⁸

¹ Beil, K., and D. Hanes. "The Influence of Urban, Natural, and Built Environments on Physiological and Psychological Measures of Stress—a Pilot Study." *International Journal of Environmental Research and Public Health* 10.4 (2013): n. pag. *PubMed*. Web. Sept. 2013. <<http://www.ncbi.nlm.nih.gov/pubmed/23531491>>.

² Beukeboom, C., D. Langeveld, and K. Tanja-Dijkstra. "Stress-reducing Effects of Real and Artificial Nature in a Hospital Waiting Room." *Journal Of Alternative and Complementary Medicine* 18.4 (2012): n. pag. *PubMed*. Web. Sept. 2013. <<http://www.ncbi.nlm.nih.gov/pubmed/22489806>>.

³ Detweiler, M., and T. Sharma, et al. "What Is the Evidence to Support the Use of Therapeutic Gardens for the Elderly?" *Psychiatry Investigation* 9.2 (2012): n. pag. *PubMed*. Web. Sept. 2013. <<http://www.ncbi.nlm.nih.gov/pubmed/22707959>>.

⁴ Horowitz, Sala. "Therapeutic Gardens and Horticultural Therapy: Growing Roles in Health Care." *Alternative & Complementary Therapies* 18.2 (2012): 78-83. *One Search*. Web. Sept. 2013. <<http://dx.doi.org/10.1089/act.2012.18205>>.

⁵ Mitrone, S. "Therapeutic Responses to Natural Environments: Using Gardens to Improve Health Care." *Minnesota Medicine* 91.3 (2008): n. pag. *PubMed*. Web. Sept. 2013. <<http://www.ncbi.nlm.nih.gov/pubmed/18438084>>.

⁶ Park, Seong-Hyun, and Richard H. Mattson. "Ornamental Indoor Plants in Hospital Rooms Enhanced Health Outcomes of Patients Recovering from Surgery." *The Journal of Alternative and Complementary Medicine* 15.9 (2009): 975-80. *PubMed*. Web. Sept. 2013. <<http://www.ncbi.nlm.nih.gov/pubmed/?term=Ornamental+indoor+plants+in+hospital+rooms+enhanced+health+outcomes+of+patients+recovering+from+surgery>>.

⁷ Dijkstra, K., M. E. Pieterse, and A. Pruy. "Stress-reducing Effects of Indoor Plants in the Built Healthcare Environment: The Mediating Role of Perceived Attractiveness." *Preventive Medicine* 47.3 (2008): n. pag. *PubMed*. Web. Sept. 2013. <<http://www.ncbi.nlm.nih.gov/pubmed/18329704>>.

⁸ Walch, J, B Rabin, R Day, J Williams, K Choi, and J Kang. "The Effect of Sunlight on Postoperative Analgesic Medication Use: A Prospective Study of Patients Undergoing Spinal Surgery." *Psychosomatic Medicine*. 67.1 (2005): 156-63. Web. 17 Nov. 2013. <<http://www.ncbi.nlm.nih.gov/pubmed/15673638>>.

⁹ Lechtzin, Noah, Anne M. Busse, Michael T. Smith, Stuart Grossman, Suzanne Nesbit, and Gregory B. Diette. "A Randomized Trial of Nature Scenery and Sounds Versus Urban Scenery and Sounds to Reduce Pain in Adults Undergoing Bone Marrow Aspirate and Biopsy." *The Journal of Alternative and Complementary Medicine* 16.9 (2010): 965-72. Print.

¹⁰ Vincent, E, D Battisto, I. Grimes, and J McCubbin. "The Effects on Nature Images on Pain in a Simulated Hospital Room." *Health Environments Research & Design Journal*. 3.3 (2010): 42-55. Web. 17 Nov. 2013. <<http://www.ncbi.nlm.nih.gov/pubmed/21165860>>.

¹¹ Murray, Sharon Smith, Emily Slone, McKinney, and Sharon Smith. Murray. *Foundations of Maternal-newborn and Women's Health Nursing*. Maryland Heights, MO: Saunders Elsevier, 2010. Print.

¹² Ulrich, R. "View through a Window May Influence Recovery from Surgery." *American Association for the Advancement of Science* 224.4647 (1984): 420-21. Web. Sept. 2013. <<http://mdc.mo.gov/sites/default/files/resources/2012/10/ulrich.pdf>>.

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

Nature should begin to be implemented in the hospital due to its therapeutic effects on pain and stress.

Further research should be conducted to gather more evidence on nature's effects on healing time and mood.

More research should also be done on which populations respond more positively or negatively to the therapeutic effects of nature, which type of nature therapy is most effective, and what types of nature are the most effective and practical in the hospital setting.