Nature for Health and Wellness: What does the Evidence Show?

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Nature Quest
Nature alone Cures

“Although evidenced based knowledge about nature based health promotion is not readily used in nursing and health care, its development and application are critical to designing effective strategies to strengthen both human and environmental health.”


Nursing has a rich history of using Nature for healing

“Nature alone Cures”

Challenges
Current trend away from nature:
• Progressive since 1987
• Influence of Technology
• < 5% of our day is spent outdoors


After completion of this seminar, participants will be able to:
• 1. Synthesize current research on the health benefits of nature.
• 2. Evaluate current evidence based practice standards for nature interventions for pain control, stress reduction, attention deficit disorders, depression and following breast cancer and cardiac diagnosis.
• 3. Evaluate the use of nature interventions for improving self-care, problem-solving, and learning.
• 4. Describe three potential benefits of nature interventions on improving patient safety.
• 5. Identify three methods of incorporating nature interventions into your nursing practice.

Nature’s impact on Illness Recovery
• Better health outcomes, quicker recovery from illness (Park & Mattson, 2009; Ulrich, 1984)
• Lower mortality from stress-induced disease (Hasson-Kitchin et al., 2009; Van Den Berg & Cauters, 2010)

Healing Power of Nature: A Look at the Research
Brains reaction to nature viewing
• Increased alpha waves and serotonin excretion
  (Selhub & Logan, 2012) Your Brain on Nature
• Decreased anger
  (Selhub & Logan, 2012) Your Brain on Nature
• Increased activity of the parahippocampal gyrus area releasing dopamine
• Stress reduction (Ulrich, 1991)
• Restoration of Attention (Kaplan, 1995)
• Improved sleep (Morrita, E. et al 2011)

Study and Year | Major findings
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Ulrich (1991) | Passive nature viewing
• Better recovery (p<0.05)
• Lower scores of anger (p<0.05)
• Less fear (p<0.05)
English, Wilson, & Keller-Olaman, (2008) | Qualitative study
• Stress relief and relaxation with passive and active nature viewing
Hayashi et al., (2008) | Garden viewing improved emotional state (p<0.05)
Korpela & Ylen, (2005) | Adults in community look to a favorite nature spot to offer stress relief (p<0.05)
Delaney and Barrere (2009) | Nature offers stress reduction, relaxation, feelings of peace, harmony in relationships
McCaffery (2007) | Garden walks: beneficial, safe, and cost-effective in adults aged 65

Significance of Technology
Americans are spending less time in nature each year since 1987.
• ¾% less time/year
• Technology competes for our leisure time.
• Video games, movie watching, Internet use, gas prices
<table>
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<tr>
<th>Study and Year</th>
<th>Major findings</th>
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| Morita et al. (2006) Shinrin-yoku or forest walking | • Reduces stress  
• Promotes relaxation  
• Reduces hostility and depression (p<0.001) |
| Berman, Jonides, and Kaplan (2008) | Cognitive abilities after reset after nature walk despite no improvement in mood |
| Van Den Berg and Custers (2007) | Decreased salivary cortisol levels within 15 minutes in gardening adults     |
| Law et al., (2009) | Nature viewing reduced salivary cortisol levels  
• Reduced heart rate response (p<0.01)  
• Decreased diastolic blood pressure (p<0.05)  
• Pulse rate (p<0.05)  
• Improved feelings of comfort (p<0.05) |
| Kline (2009) | Music, with passive nature viewing, enhances the effect of either one alone    |

**Depression**
- Costs 12.4 billion/year in direct treatment costs
  - Pharmaceuticals
  - Healthcare visits
- Costs $4 billion/year in indirect lost work and productivity
- Impacts more women
- Mild to moderate depression medication use not better than placebo in meta-analysis
  (Fournier et al. 2010)

**Nature Interventions for Depression**
- Increase serotonin
- Improved mood
- Outdoor walk 71% reduction in depression as compared with 45% with indoor walk (Anon 2007)

**Pain relief**
- Nature viewing reduces pain and pain medication use
  (Cimprich and Ronis 2003)
- Provides distraction
  - Music, with passive nature viewing, enhances the effect of either one alone (Kline, 2009)

**Nature Interventions with newly diagnosed Breast Cancer patients**
- Immune system effects of nature
  - Increase NK cells and anticancer proteins as much as 40% (Li et al. 2008)
  - Evergreen trees increase NK cells (Li et al. 2009)
  - Sunlight increases production of Vitamin D, WBC, & RBC
- Attention issues in Breast CA patients
  - Cimprich and Ronis (2003) study
  - RCT nature intervention (n=83) vs. usual care (n=74)
  - Statistically significant recovery of direct attention after nature viewing. (p<0.05)

**Cardiac Illness**
- Hostility known to increase cardiovascular risk
- Forest viewing or walking (Shinrin-yoku)
- Park et al. (2010) found forest viewing as compared to urban viewing
  - Lower pulse rates (p<0.01)
  - Lower systolic BP (p<0.01)
  - Lower Diastolic BP (p<0.05)
- Delaney and Barre (2009) cardiac patients reported feeling more peaceful, less stress and more peaceful relationships with family
Attention Deficit Disorder
• 2 million students have ADHD
• Outside recess is threatened in up to 65% of schools
  • Survey by National PTA (www.pta.org)
  • Less symptoms if spending “green” time outside (Kuo & Taylor, 2004 and Taylor & Kuo, 2009)
• Open green space


Using Nature for Stress Reduction

Introduction
Stress-Related Illness:
• Affects 43% of adults in the US
• Costs $300 billion dollars annually
• 3-fold increase in adverse health events
• Impact of stress hormones


Evaluation of a Passive Nature Viewing Program Set to Music

Methodology
Intervention
• One of three selections
• Earth Songs DVD
  • Nature scenes
  • Variety
  • Music

Theoretical Framework
### Qualitative Analysis

Five Key categories
- Technology
- Personal preferences
- Time
- Immersion
- Use of program
  - family

### Recommendations

- Explore with adults who can not spend time in nature
- Integrate personal preferences
- Investigate use in a variety of settings
- Investigate best frequency and duration
- Develop a larger program over longer duration

### Can Nature Improve Patient Safety?

- Medication safety
- Delirium prevention
- Falls prevention

### Health Promotion

- Use nature with Nursing students
  - Laughter yoga in nature
  - Hula hooping
  - Health rhythms protocol
  - Nature Quests
- With Families
- Self Care

### Self Care

- Nature as Nurture
Nurse as health coach, advocate and change agent

- Reinforce health benefits of nature in your practice setting
- Integrate nature into your self-care
- Advocate for nature access and views
- Offer nature videos to patients if they are unable to get outside

Three ways to Incorporate Nature

- Move into nature
  - Healing gardens
- Sit by a window
- Virtual nature scenes
  - Nature TV

Summary

Benefits of Nature Outcomes

- Physiological
- Psychological
- Cognitive/Attention
- Spiritual


Your Turn

- Identify three ways to use nature in your practice