Horticultural Therapy- Research and Evidence-Based Practice

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Our Relationship with Nature

- Psycho-Evolutionary
- Cognitive Restoration
- Learning
Psycho-Evolutionary/Biophilia

- Shelter
- Water
- Food
- Verdant Green
- Flowers/Color
- Sunlight
- Animals
- Open space
- Views/Vistas
- Diversity
- Aesthetics
- (Kellert & Wilson 1993)
The Restorative Effect

- Feeling Away
- Compatibility
- Fascination
- Extent
  - (Kaplan & Kaplan 1989)
Learning: The Effects of Learning on Nature Appreciation

- Sensory
- Aesthetics
- Utilitarian
- Early Experiences
HT Model-Horticulture as Therapy

HT

Environment

Therapeutic use of self

Activity
Ideals For Conducting Research

Large “N”

Control

Double Blind

Randomized

Sophisticated Designs
Challenges For HT’s Conducting Research

- Subjects
- Clinical Setting
- Control
- Blind?
- Randomized
- Generalization
Designs

- Case study
- Qualitative
- Survey
- Single group within ss
- Between groups
Case Studies

**Strengths**
- Rich source of ideas for future study
- Opportunity for clinical innovation
- Method for studying rare events
- Less resources needed

**Weaknesses**
- Difficulty drawing cause and effect conclusions
- Data collection bias i.e. poor memory in subject
- Observer bias
- Generalization
Single Subject Experiments

- Often used in Applied Behavior Analysis

- Individual variable is examined

- Need baseline

- More scientific control than case studies

- Individual differences in baseline and response
Qualitative Research

- Open ended inquiry
- Assess a person’s perception
- Specific to setting or researcher
- Looks at themes present in treatment experience regarding benefits and outcomes
Qualitative Research

• Open ended inquiry

• Assess a person’s perception

• Specific to setting or researcher

• Looks at themes present in treatment experience regarding benefits and outcomes
Qualitative Responses

• “I think working with living things has a positive effect on healthy and other people. I have seen quiet people open up and smile. I feel this kind of therapy is essential for healing and for a feeling of happy and hopeful mood. To be able to take plants home and looking forward to caring for them is wonderful.” A

• “I feel this was very special for me. I have been in and out of hospitals from the age of 11 yrs and this is the first time I have been at peace with myself” M

• “The Greenhouse Program provides an escape from the daily medical distress here at the Institute. There is beauty. A peace and a comfortable soothing feeling while in this environment that pleases the senses and removes me from the medical realities. It is a very worthwhile program” P.J.
Questionnaires

- Widely used data collection technique
- Looks at self-reported attitudes, beliefs, knowledge and behavior
- Varies from relatively simple to complex
# Questionnaires

## Strengths
- Most popular method of inquiry
- Can be adapted for many settings and applications
- Standardized scales available

## Weaknesses
- People often say what they think you want to hear
- Social desirability
- Language/culture issues
- Cognitive abilities
Survey Development Hints

- Avoid jargon, slang, and abbreviations
- Avoid ambiguity and vagueness
- Avoid emotional language and prestige bias
- Avoid double barreled questions
- Avoid leading questions
- Keep within respondents ability to understand
- When using Likert scale mirror existing facility scaling or previous study scale language
HT Friendly Scales

- **Physiological measures**
  - Heart rate
  - Blood pressure
  - Cortisol
  - Galvanic skin response
  - (Pain scales)

- **Cognitive Measures**
  - Digit span
  - Necker cube
  - Perceived Restoredness Scale
  - Learning curves

- **Emotional measures**
  - Beck Depression Inventory
  - Hospital Anxiety Depression Scale
  - Geriatric Depression Scale
  - ZIPPERS
  - Profile of Mood States
  - Self esteem
  - Modified Cohen-Mansfield Agitation Inventory
  - Spielberger state-trait anxiety
Single Group Within Subject Designs

- Good for looking at changes over time
- Learning
- Self esteem
- Quality of life
- Behavioral change
Within Subjects Design

**Strengths**

- Repeat outcome measures to capture change over time and control for maturation, learning and other changes
- Subjects serve as own control
- Good when variance is high
- Good for pain research

**Weaknesses**

- More complex design
- More expertise needed
- More time
- More subjects needed
Between Groups Designs

- Good for studying one time interventions
- Less treatment contamination
- Use counter-balancing
- Use matching i.e. Ulrich
Mixed Designs

- Combines aspects of quantitative and qualitative research
- Takes more time and resources
- Qualitative data adds dimension
- Convergent validity
Design Hints

- Scales - other HT studies
- Other disciplines
- Same outcome
- Same populations - match if you can
- Control
- Treatment
Controls

• Placebo-assess expectations

• Active control-Similar to treatment

• No intervention-wait list
Treatment

- Use standardized treatment
- Consistency important
- Describe thoroughly in write-up
- Consider time, setting, and practitioner
Data Collection

- Keep it simple

- Be as non-intrusive as possible

- Describe rational behind choice

- Report data-the good, the bad, and the ugly
A Couple of Projects at Rusk

Horticultural therapy- Benefits in rehab

Cardiac study-Effects of HT on Mood in cardiopulmonary rehabilitation patients

Nature imagery-Effects of Biophilic Nature Imagery on Indexes of Patient Satisfaction
What’s Happening Here and There

• Asia
• Hong Kong
• Korea
• Japan
• Taiwan
Whats Happening Here and There

- Scandinavia
  - Healing Garden at Alnarp
  - Refugees
  - Rehabilitation
  - Green Care
What’s Happening Here and There

• Germany and Europe

• Green Care

• Education Programs
A Few Goodies to Consider

- Epidemiological van den Bosch
- Mechanism Kuo
- Positive Outcomes Bratman et al.
- Nature Based Therapy Reviews
Recommendations for the Future

• Build in data collection to clinical care

• Partnerships and collaboration

• Evidence based practice

• Keep on Growing
Thank You for Your Attention