Beyond Boundaries

- What are the boundaries of traditional pain management?

- What about current practice is not as good as we would like it to be?
Boundaries

- Traditional Approach = medication
- Limited evidence for complementary therapies
- Practitioner concerns
  - Time
  - Tools
  - Knowledge
  - Confidence
  - Perception that complementary therapies are outside my scope of practice
Objectives

- Identify evidence-based complementary approaches to pain management
- Describe potential benefits of complementary approaches for pain and related symptoms
- Discuss application of complementary approaches in clinical practice
Beyond traditional treatment with pain medicines...
Pain

- “An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.”

- “It is unquestionably a sensation in a part or parts of the body, but it is also always unpleasant and therefore also an emotional experience.”

International Association for the Study of Pain
Pain is More than a Physiologic Response

Gatchel et al., 2007
Mind-Body Connection

Sensory, motor, autonomic nerves

Hormones
Neurotransmitters
Immune cytokines

Taylor et al., 2010
Strategies Used by Patients with Pain

- Heat / Cold
- Massage
  - Rubbing the area
  - Pressure
- Positioning
- Activity Restriction
- Distraction
  - Watching TV
  - Music
- Exercise
- Relaxation
- Imagery
- Eating / Drinking
- Sleeping
- Meditation
- Reading scripture
What are Complementary Therapies?

“...we have all seen these terms on the Internet and in marketing, but what do they really mean? While the terms are often used to mean the array of health care approaches with a history of use or origins outside of mainstream medicine, they are actually hard to define and may mean different things to different people.”

Complementary, Alternative, or Integrative Health: What’s In a Name? http://nccam.nih.gov/health/whatiscam
## Complementary Approaches

### Natural Products
- Vitamins / minerals
- Herbs (botanicals)
- Probiotics
- Dietary supplements

### Mind and Body Practices
- Acupuncture
- Massage
- Spinal manipulation
- Meditation
- Relaxation techniques
- Tai chi, qi gong
- Yoga
- Healing touch
- Hypnotherapy / Imagery

Complementary Approaches

Alternative medical systems

- Ayurvedic medicine
- Traditional Chinese medicine
- Homeopathy
- Naturopathy

http://nccam.nih.gov/health/whatiscam
Basic Philosophy – Holistic Health

- Body has the power to heal itself
- Health is influenced by mind, body, and spirit
- Treatment should be individualized

“Effective pain management requires therapies that treat the whole patient, both physically, and through a holistic biopsychosocial model.”

Buckenmaier & Schoomaker, 2014
Evidence for Complementary Health Approaches
Systematic Review – Chronic Pain

## Approaches and Pain Conditions

### Complementary Health Approaches
- Mind-body Therapies
- Movement Therapies
- Physically-Oriented Therapies
- Sensory Art Therapies
- Multi-model Integrative Approaches

### Chronic Pain Conditions
- Musculoskeletal pain
- Visceral pain
- Headache
- Cancer pain
- General chronic pain
- Others

Delgado et al., 2014
Mind-Body Therapies

- Meditation
- Relaxation
- Biofeedback
- Guided imagery / self-hypnosis
- Autogenic training

Lee et al., 2014
Mind-Body Therapies

- Meditation, relaxation, autogenic training — small, but beneficial effect

- Relaxation response
  - Slowed HR
  - Reduced BP
  - Improved digestion
  - Enhanced immune activity
  - Alterations in brain activity
Movement Therapies

- Qi Gong
- Tai Chi
- Yoga

© Bob Stockfield  Courtesy: National Center for Complementary and Alternative Medicine

Lee et al., 2014
Movement Therapies

- *Tai Chi, Qi Gong – moderate effect size*
- *Yoga – large effect size*

- Other benefits, beyond pain relief
  - Reduced stress, anxiety
  - Increased flexibility
  - Improved energy
  - Enhanced muscle strength

Lee et al., 2014
Physically-Oriented Therapies

- Acupressure
- Self-Massage
- TENS
- *Not enough evidence*

Crawford et al., 2014
Sensory Art Therapies

- Music therapy
- Journaling

- *Music therapy - moderate effect size*

Crawford et al., 2014
Multi-Modal Therapies

- Combined one or more self-care approaches

- Relaxation + another approach
  - more effective than control conditions
  - as effective as a single self-care strategy

Lee et al., 2014
Systematic Reviews – Acute Pain

Procedural / Post-op Pain

- Hypnosis
- Guided Imagery
- Music
- Relaxation

Hawkins, 2001; Posadzki & Ernst, 2011; Posadzki et al., 2012; Somrarnyart et al., 2007; Kwekkeboom & Gretarsdottir, 2006; Seers & Carroll, 1998
Systematic Reviews – Acute Pain

- Guided Imagery
- Relaxation
- Acupressure

Posadszki & Ernst, 2011; Posadzki et al., 2012; Kwekkeboom & Gretarsdottir, 2006; Seers & Carroll, 1998; Chen & Wang, 2014
Systematic Reviews – Acute Pain

Dysmenorrhea / Labor Pain

- Acupressure

Chen & Wang, 2014
Systematic Reviews – End of Life Pain

- Beneficial effects in randomized controlled trials
  - Massage
  - Relaxation
  - Imagery / hypnosis

- Individual beneficial effects in one group (pre-post) trials
  - TENS
  - Aromatherapy massage

Pan et al., 2000; Lafferty et al., 2006
Evidence under construction in ongoing funded research...
<table>
<thead>
<tr>
<th>Pain Type</th>
<th>Complementary Health Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osteoarthritis</td>
<td>• Acupuncture <em>(R. Gollub, Massachusetts General Hospital)</em>&lt;br&gt;• CBT, exercise, &amp; weight management <em>(K. Allen, Duke University)</em>&lt;br&gt;• Massage <em>(A. Perlman, Duke University)</em>&lt;br&gt;• Tai Chi <em>(C. Wang, Tufts Medical Center)</em>&lt;br&gt;• Yoga <em>(R. McCaffrey, Florida Atlantic University)</em></td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>• Mindfulness meditation <em>(A. Ali, Yale)</em>&lt;br&gt;• Tai Chi <em>(C. Wang, Tufts Medical Center)</em></td>
</tr>
<tr>
<td>Back pain</td>
<td>• Mindfulness meditation <em>(D. Cherkin, Group Health Cooperative)</em>&lt;br&gt;• Yoga <em>(R. Saper, Boston Medical Center)</em></td>
</tr>
<tr>
<td>Neck pain</td>
<td>• Massage <em>(K. Sherman, Group Health Cooperative)</em></td>
</tr>
<tr>
<td>Knee pain</td>
<td>• Guided imagery <em>(A. Jacobson, Kent State University)</em></td>
</tr>
<tr>
<td>TMJ pain</td>
<td>• Cognitive-behavioral therapy <em>(J. Haythornthwaite, Johns Hopkins University)</em></td>
</tr>
</tbody>
</table>
## Other Pain

<table>
<thead>
<tr>
<th>Pain Type</th>
<th>Complementary Health Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visceral Pain</strong></td>
<td></td>
</tr>
<tr>
<td>IBS</td>
<td>• Acupuncture / Moxibustion <em>(J. Anastasi, New York University)</em></td>
</tr>
<tr>
<td><strong>Diabetic Neuropathy</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Acupuncture <em>(M. Chao, UCSF)</em></td>
</tr>
<tr>
<td><strong>Headache</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Mindfulness meditation <em>(D. Seminowicz, University of Maryland)</em></td>
</tr>
<tr>
<td><strong>Cancer Pain</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Yoga <em>(L. Porter, Duke University)</em></td>
</tr>
<tr>
<td></td>
<td>• Relaxation, Distraction, Guided imagery <em>(K. Kwekkeboom, University of Wisconsin)</em></td>
</tr>
<tr>
<td><strong>General Pain</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Vocal music therapy <em>(J. Bradt, Drexel University)</em></td>
</tr>
</tbody>
</table>
Potential benefit to pain-related symptoms...
Potential Benefits

- Reduced anxiety
- Improved mood
- Increased sense of control
- Restored hope
- Improved quality of life

- Improvement in other physical symptoms
  - Fatigue
  - Sleep
  - Appetite
  - Others
Pain and Co-Occurring Symptoms

**Antecedents**
- Symptoms that cause or contribute to pain
  - Constipation
  - Vomiting
  - Fatigue
  - Depression

**Consequences**
- Symptoms that are caused by or worsened with pain
  - Sleep disruption / insomnia
  - Dyspnea
  - Nausea, reduced appetite
  - Anxiety, Depression
Common Symptom Clusters with Pain

- Heart failure
- Chronic stable angina
- Sleep Disturbance
- Dyspnea
- Depression
- Fatigue
- Cancer
- Osteoarthritis
- Ischemic stroke

Beck et al., 2005; Herr et al., 2014; Kimble et al., 2011; Lin et al., 2013; Murphy et al., 2011; Naess et al., 2012
Potential Shared Mechanisms

- Proximity of brain centers regulating pain and other symptoms
- Similar or shared processing - neurotransmitter systems
- Inflammation
  - Cytokine-induced “sickness behavior” syndrome
    - Pain, GI symptoms, wasting, fatigue, cognitive impairment, anxiety, depression

Parker et al., 2005
Potential Shared Mechanisms

- Depression
- Psychological reactions to symptoms
- Maladaptive behaviors
  - excessive use of medications
  - inactivity
- Demographic, ethnic, cultural, spiritual, religious, social factors that affect the perception of and response to symptoms

Parker et al., 2005
A Patient-Controlled Cognitive Behavioral Intervention for Pain, Fatigue, and Sleep Disturbance in Advanced Cancer

- Pilot randomized controlled trial

- Cognitive Behavioral Intervention
  - Relaxation, guided imagery, distraction recordings
  - Self-selected and administered via MP3 player at whatever time and place they are needed

Kwekkeboom et al., 2012
CB Strategies

- **Symptom-Focused Imagery**
  - Pain-focused
  - Fatigue-focused
  - Sleep-focused

- **Nature-Focused Imagery**
  - Beach
  - Mountain
  - Meadow

- **Relaxation Exercises**
  - Progressive muscle relaxation
  - Jaw relaxation
  - Focused breathing

- **Nature Sounds**
  - Rain storm
  - Surf & waves
  - Forest sounds
Methods

- N=86 patients with advanced lung, colorectal, prostate, or GYN cancers

- Used the assigned treatment during a 2-week period of therapy (chemotherapy or radiation)

Outcomes

- Severity of the Symptom Cluster
- Symptom Interference with Daily Life
- Pre-to-post treatment change in symptom severity & distress (intervention group)
Results

**Symptom Cluster Severity**

- **Baseline**
- **2 weeks**

**Symptom Interference**

- **Baseline**
- **2 weeks**
Pre-Post Treatment Severity & Distress

Pain Severity: Pre (3.27) vs. Post (2.26)
Pain Distress: Pre (3.32) vs. Post (1.94)
Fatigue Severity: Pre (4.31) vs. Post (3.03)
Fatigue Distress: Pre (3.71) vs. Post (2.33)
Sleep Disturbance Severity: Pre (4.23) vs. Post (2.73)
Sleep Disturbance Distress: Pre (3.83) vs. Post (2.21)

All p < .01
Beyond Boundaries

Practitioner concerns...
Nurses’ Use of Complementary Approaches for Cancer Pain

- Survey study
- N=724 oncology staff nurses
  - Knowledge and use of 4 complementary interventions for pain
    - Music, Relaxation, Distraction, Guided Imagery
  - Beliefs about complementary interventions
  - Factors that influence decisions to use / not use complementary pain interventions

Kwekkeboom, Bumpus, Wanta & Serlin, 2008
Knowledge and Use

- Over 87% were familiar with all interventions

- Used in practice, at least sometimes
  - Music 54%
  - Guided imagery 40%
  - Relaxation 82%
  - Distraction 80%
## Beliefs

<table>
<thead>
<tr>
<th>Belief</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complementary strategies are effective</td>
<td>4.00 – 4.21</td>
</tr>
<tr>
<td>Harmless to try</td>
<td>4.30 – 4.38</td>
</tr>
<tr>
<td>Evidence-based</td>
<td>4.00 – 4.10</td>
</tr>
<tr>
<td>Pain relief obtained is worth the time / effort</td>
<td>3.70 – 3.92</td>
</tr>
<tr>
<td>Patients are open to use</td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>3.52</td>
</tr>
<tr>
<td>Relaxation</td>
<td>3.69</td>
</tr>
<tr>
<td>Distraction</td>
<td>3.49</td>
</tr>
<tr>
<td>Guided imagery</td>
<td>3.13</td>
</tr>
</tbody>
</table>

1 = strongly disagree  
5 = strongly agree
## Factors Considered

- Underlying diagnosis
- Type of pain
- Pain intensity
- Age
- Gender
- Cognitive ability
- Personality
- Emotional status
- Nurse’s training / experience
- Patient’s previous experience with the intervention
- Patient / family preferences for treatment
Perceived Barriers

- Lack of time
- Lack of access to equipment
- Inadequate knowledge
- Lack of peer support (fellow nurses vs. physician colleagues, administrators)
- Fear of being perceived as “crazy” for suggesting the treatment
How can you go beyond boundaries in your practice with complementary approaches to pain management?
Select Active Self-Care Strategies

10 Most Commonly Used Complementary Therapies

1. Natural products
2. Deep breathing
3. Meditation
4. Chiropractic & Osteopathic
5. Massage
6. Yoga
7. Diet-based therapy
8. Progressive relaxation
9. Guided imagery
10. Homeopathic treatment

Barnes, Bloom & Nahin, 2008
Patient-Centered Recommendations

Matching treatment recommendations to patient characteristics, skills, and preferences

- Age
- Culture
- Education
- Pain characteristics
  - Type
  - Intensity
  - Location
- Readiness to change
- Outcome expectancy
- Concurrent symptoms
  - Depression
  - Anxiety
  - Physical symptoms
- Aptitude for specific strategies

Bradshaw et al., 2011; Conboy et al., 2012; Keefe et al., 1981; Owens et al., 1999; Kwekkeboom et al., 1999; 2001; 2008
Key Components of Education

- Rationale for the complementary approach
- Individualized Instruction
- Modeling
- Coaching during practice
- Involvement of family, friends

MacLaren, Cohen, Larkin, & Shelton, 2008
“In the absence of cure, the most appropriate treatment will be one that addresses cognitive, affective, and behavioral factors associated with chronic pain, and not solely physical ones.”

Turk, 2002