Using Guided Imagery to Reduce Pain and Anxiety

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What Is Pain?

• An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage
• Classified as:
  o Acute
  o Acute exacerbation of recurring condition
  o Chronic
  o Cancer

International Association for the Study of Pain, 1994
American Society for Pain Management Nursing

Incidence of Pain Compared to Other Major Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>7</td>
</tr>
<tr>
<td>Cancer</td>
<td>11.9</td>
</tr>
<tr>
<td>Heart Dis.</td>
<td>16.3</td>
</tr>
<tr>
<td>Diabetes</td>
<td>25.8</td>
</tr>
<tr>
<td>Chronic Pain</td>
<td>116</td>
</tr>
</tbody>
</table>

Institute of Medicine, 2011
Impact of Pain

- Negative impact on physiological functioning
  - Cardiac
  - Respiratory
  - Metabolic
  - GI
  - Mobilization
- Psychosocial consequences
- Uncontrolled acute pain can lead development of chronic pain
- Age, racial & gender disparities
- Increased use of health care

Dunwoody et al., 2008; Von Korff et al., 2007; Staton et al., 2007; Teno et al., 2004

Cost of Pain

<table>
<thead>
<tr>
<th>Low Range</th>
<th>High Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>261</td>
</tr>
<tr>
<td>Lost Productivity</td>
<td>300</td>
</tr>
<tr>
<td>Total Cost</td>
<td>560</td>
</tr>
</tbody>
</table>

Gaskin, D.J. & Richard, P., 2012

Pain & Anxiety Connection

- Relationship between anxiety, depression, & pain
- Pain 2 X more prevalent with generalized anxiety disorder
- 54% w/ pain also had anxiety vs. 21% w/o anxiety
- Association between pain & anxiety greater than association between pain & depression
- Higher health care cost for dx. anxiety disorder & pain
- 50% of chronic pain patients have anxiety

Haug et al., 2004; Romera et al., 2010; Offson & Gameroff, 2007; McWilliams, Gooden & Cox, 2004; Zhu et al., 2009; Singh, 2012
Physiological Link

- Hippocampus plays role in ability to process pain
- Pain related anxiety increases perceived pain intensity
- Adaptation to the worst possible outcome & accompanied by anxiety

Lathe, 2001; Ploghaus et al., 2001

Pain & Integrative Medicine

- 38% of American adults use some form of CAM
- CAM use accounts for $33.9 billion total health care expenditures
- Painful conditions are number one reason adults report for using CAM

National Center for Complementary and Alternative Medicine, 2007 & 2009

Practice Inquiry Project

- Creation of an integrative medicine program in a tertiary care hospital in the Texas Medical Center
  - Use of guided imagery in an acute care setting
Clinical Questions

- What is the impact of guided imagery on pain scores in adult patients in an acute care facility?
- What is the impact of guided imagery on anxiety in adult patients in an acute care facility?
- What is the impact of guided imagery on analgesic usage in adult patients in an acute care facility?
- What is the impact of guided imagery on anti-anxiolytic usage in adult patients in an acute care facility?

Guided Imagery Defined

- Purposeful use of the imagination, using words and phrases designed to evoke rich, multisensory fantasy and memory”

Guided Imagery in Cancer Pain Management

- Could be beneficial in reducing pain
- Reduced distress, fatigue, & sleep disturbances
- Anxiety was not addressed
Guided Imagery in Surgical & Procedural Pain Management

- Positive Impact
  - Shorter procedure times
  - Less analgesic use
  - Lower pain scores
  - Reduced anxiety
  - Reduced length of stay
  - Lower pharmacy costs

- No Impact
  - Pain scores
  - Anxiety scores
  - Patient satisfaction

- Systematic review in cardiac surgery patients
  - Mixed findings

Guided Imagery in Chronic Pain Management

- Fibromyalgia
  - Decrease pain scores; improved functional status; improved self-efficacy in managing pain & other symptoms
  - No changes in psychological distress

- Osteoarthritis
  - Decrease pain scores; increase mobility; decreased OTC & prescription analgesic use

- Non Cancer Pain
  - Reduced pain & pain disability scores
  - No changes in biological markers (plasma cortisol, lymphocyte subset counts & proliferation, interleukin-1)

- Pain lasting > 3 months
  - Decrease in pain scores, mental stress, & increases in quality of life

- Systematic Reviews
  - Fibromyalgia: Reduced pain
  - Non-musculoskeletal pain: Reduced pain

Subjects

- Hospitalized patients
- 18 years & older
- English speaking
- Males & females
- Any ethnic background
- Medical, surgical, or oncological diagnosis
- Referred to APN-led pain management program
Measurement Tools

- Self-reported pain scores
  - 0 (no pain) to 10 (worst pain)
  - \( r = 0.91 \)
- Beck Anxiety Inventory
  - 4 point Likert scale
  - \( r = 0.75 \)
- Morphine Equivalent Daily Dose (MEDD)
  - Conversion of analgesic dosing to a standard morphine equivalent dose

Downie et al., 1978; Beck et al., 1988

Intervention

- Pain Score
- Anxiety Score
- Medication Use

Guided Imagery

- MP-3 Player
- 40 Minute Recording
- 2 X daily use

Pain: Self-reported pain scores \((r = 0.91)\) (Downie, et. al., 1978)
Anxiety: Beck Anxiety Inventory \((r = 0.75)\) (Beck, et al., 1988)

Demographics

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>52 years (Range: 20 to 88 years)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Female 53%</td>
<td>Male 47%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>White 53%</td>
<td>Black 30%</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Medicine 69%</td>
<td>Surgery 25%</td>
</tr>
</tbody>
</table>

N = 36
Results

<table>
<thead>
<tr>
<th>Time</th>
<th>N = 18</th>
<th>Self Reported Pain Score</th>
<th>Beck Anxiety Inventory Score</th>
<th>MEDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>6.72</td>
<td>25.81</td>
<td>308</td>
<td></td>
</tr>
<tr>
<td>24 Hrs.</td>
<td>6.61</td>
<td>18.47</td>
<td>(p = 0.0001)</td>
<td>259</td>
</tr>
<tr>
<td>48 Hrs.</td>
<td>6.36</td>
<td>12.86</td>
<td>(p &lt; 0.0001)</td>
<td>251</td>
</tr>
</tbody>
</table>

% Change from Pre to 48 hrs: 6% Decrease 50% Decrease 19% Decrease

Conclusions

- Statistical significance with anxiety scores
- Statistical significance not seen with the other measures
- Clinical significance seen in pain scores & analgesia use
- Viable CAM approach
- Positive feedback from patients enrolled
- Easy to use

Thank You

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