Massage Therapy for Pain Management: Applications for the Classroom

Jerrilyn Cambron, LMT, DC, PhD
jcambron@nuhs.edu
Is this how you feel when someone says the word “research”?
This talk’s highlights...

1. Why is research important?
2. What are the new research findings in massage therapy?
3. How do these results affect the massage therapy profession?
4. How do we use this information in the schools?
1. Why is research important?
Why is research important?

To describe treatment effectiveness, as well as adverse events
Why is research important?

To gain recognition by other health care professionals
Why is research important?

To validate findings for insurance providers
Why is research important?

Competency Element 6.3 Research Literacy

1. Explain the value of research to the profession.
2. Identify sources of published research literature on therapeutic massage and bodywork.
3. Critically read and evaluate a published research article in the field of massage therapy and bodywork.
Requirements for renewing Board Certification

- Complete 24 CEs from NCBTMB Approved Providers within a two-year period, including:
  - 3 hours in Ethics
  - 3 hours in Research
2. What are the new research findings in massage therapy?
What is the state of the science regarding the impact of massage therapy for populations living with pain?
Systematic review and meta-analysis

Hierarchy of Scientific Evidence

- Meta-analyses & systematic reviews
- Randomized controlled trials
- Cohort studies
- Case-control studies
- Cross sectional studies
- Animal trials & in vitro studies
- Case reports, opinion papers, and letters

Not Scientific Evidence

- Youtube videos,
  personal anecdotes,
  gut feelings, parental instincts,
  some guy you know,
  websites like Natural News, Info Wars, Natural Health Warriors, Collective Evolution, Green Med Info, Mercola.com, Whale.to, etc.
Methods for meta-analysis

1. Assemble working group
2. Develop research question
3. Search literature
4. Screen literature
5. Review literature
6. Synthesize data
Assemble Working Group

Steering Committee Members
- Jerrilyn Cambron, LMT, DC, PhD
- Ruth Werner, BCTMB
- Jan Schwartz, MA, BCTMB
- Pete Whitridge, BA, LMT
- Christopher Deery, LMT
- Chester Buckenmeier III, MD, COL (ret) USA
- Pam Buckenmeier, RN, LMT
- Paul Pasquina, MD, COL (ret)
- Eric Schoomaker, MD, PhD, LTG (ret) USA

Review Team
- Cindy Crawford
- Courtney Boyd
- Charmagne Paat
- Ashley Price
- Lea Xenakis
- Weimin Zhang
Develop Research Question

- Using the PICOS method (Population, Intervention, Control/Comparison, Outcome, Study Design), we developed the specifics of our research question.
Population: patients experiencing pain

An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage. Pain is always subjective. Pain can be acute or chronic.
**Population:** patients experiencing pain

**Intervention:** massage therapy

*The systematic manipulation of soft tissue with the hands that positively affects and promotes healing, reduces stress, enhances muscle relaxation, improves local circulation and creates a sense of well-being*

- Manual forces
- Soft-tissue deformation
- Gliding
- Torsion
- Shearing
- Elongation

- Oscillating
- Touch
- Compression
- Gliding
- Percussion
- Friction

- Vibration
- Kneading
- Movement
- Positioning
- Stretching
- Holding
Population: patients experiencing pain

Intervention: massage therapy

Control/Comparison: sham, no treatment, or active comparators
Population: patients experiencing pain

Intervention: massage therapy

Control/Comparison: sham, no treatment, or active comparators

Outcome(s): function

- Pain
- Activity
- Sleep
- Mood
- Stress
- Health-related quality of life
- Physiological outcomes
Population: patients experiencing pain

Intervention: massage therapy

Control/Comparison: sham, no treatment, or active comparators

Outcome(s): function

Study Design: Randomized clinical trials, English language
Search the literature

(pain) AND ("massage" OR massotherap* OR "musculoskeletal manipulation" OR "myofascial release" OR neuromuscular therap* OR "strain counterstrain" OR "trigger" OR "propriocceptive neuromuscular facilitation" OR "bodywork" OR "rolfing" OR "structural integration" OR trigger point therap* OR "manual lymph drainage" OR manual therap* OR "lomi" OR hydrotherap* OR "passive motion" OR heat therap* OR "gliding" OR knead* OR "friction" OR "holding" OR "percussion" OR "vibration" OR "direct pressure" OR "skin rolling" OR "manual stretch" OR "manual stretches" OR "manual stretching" OR "contract-relax" OR "passive stretch" OR "passive stretches" OR "passive stretching" OR "rocking" OR "traction")
Screen the Literature

Quality Assessment
- Internal Validity: SIGN 50 Checklist
- External Validity: EVAT

Data Extraction
- Information related to PICO
- Gaps in reporting helped to form STRICT-M
Synthesize the Data (Meta-analyses)

- Statistically combine results of similar studies to understand overall picture
- Group by:
  - Population: General Pain, Cancer Pain, Surgical Pain
  - Outcome: Pain, Activity, Stress, Mood, Quality of Life, Sleep, Pain Pressure Threshold, Physiological
  - Comparator: Active Comparator, No Treatment, Sham
The Results
# Results *(Methodological Quality)*

<table>
<thead>
<tr>
<th>QUALITY</th>
<th>ALL POPULATIONS</th>
<th>CANCER</th>
<th>SURGERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (++)</td>
<td>High (++)</td>
<td>High (++)</td>
<td>High (++)</td>
</tr>
<tr>
<td>Acceptable (+)</td>
<td>Acceptable (+)</td>
<td>Acceptable (+)</td>
<td>Acceptable (+)</td>
</tr>
<tr>
<td>Low (o)</td>
<td>Low (o)</td>
<td>Low (o)</td>
<td>Low (o)</td>
</tr>
</tbody>
</table>
# Results (Methodological Quality)

<table>
<thead>
<tr>
<th>QUALITY</th>
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<th>CANCER</th>
<th>SURGERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (++)</td>
<td>10</td>
<td>High (++)</td>
<td>High (++)</td>
</tr>
<tr>
<td>Acceptable (+)</td>
<td>50</td>
<td>Acceptable (+)</td>
<td>Acceptable (+)</td>
</tr>
<tr>
<td>Low (o)</td>
<td>7</td>
<td>Low (o)</td>
<td>Low (o)</td>
</tr>
</tbody>
</table>

The table above shows the quality assessment for different categories across all populations, cancer, and surgery. The quality levels are categorized as High (++), Acceptable (+), and Low (o), with corresponding counts provided.
**Results** *(What is the efficacy of massage for treating...)*

**General (Musculoskeletal Pain) Populations**
- **Pain**, compared to an active comparator? Sham? No treatment?
- **Activity**, compared to an active comparator? Sham?
- **Anxiety**, compared to an active comparator?
- **Quality of life**, compared to an active comparator?

**Surgery Populations**
- **Pain**, compared to an active comparator?
- **Anxiety**, compared to an active comparator?

**Cancer Populations**
- **Pain**, compared to an active comparator? No treatment/sham?
- **Sleep**, compared to an active comparator?
- **Anxiety**, compared to an active comparator?
Results (*Interpreting Meta-analyses*)

Forest plots...

- Look for the center line
- Look for the diamond

Combined Result
Results (Musculoskeletal pain)

What is the efficacy of massage for treating pain...

...compared to no treatment?

<table>
<thead>
<tr>
<th>Study name</th>
<th>Std diff in means</th>
<th>Standard error</th>
<th>Variance</th>
<th>Lower limit</th>
<th>Upper limit</th>
<th>Z-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalamir, 2010</td>
<td>-0.227</td>
<td>0.449</td>
<td>0.201</td>
<td>-1.106</td>
<td>0.653</td>
<td>-0.505</td>
<td>0.613</td>
</tr>
<tr>
<td>van den Dolder, 2003</td>
<td>-1.080</td>
<td>0.398</td>
<td>0.156</td>
<td>-1.860</td>
<td>-0.300</td>
<td>-2.715</td>
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<td>Mok, 2004</td>
<td>-2.133</td>
<td>0.248</td>
<td>0.062</td>
<td>-2.619</td>
<td>-1.647</td>
<td>-8.599</td>
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<td>Perlman, 2006</td>
<td>-0.951</td>
<td>0.256</td>
<td>0.065</td>
<td>-1.452</td>
<td>-0.449</td>
<td>-3.716</td>
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<tr>
<td></td>
<td>-1.143</td>
<td>0.406</td>
<td>0.165</td>
<td>-1.939</td>
<td>-0.348</td>
<td>-2.816</td>
<td>0.005</td>
</tr>
</tbody>
</table>

NOTES: Weights are from random effects analysis
What is the efficacy of massage for treating pain... ...
...compared to no treatment?

Massage is significantly better
What is the efficacy of massage for treating pain... …compared to sham?

NOTES: Weights are from random effects analysis
Results *(Musculoskeletal pain)*

What is the efficacy of massage for treating** pain**...

...compared to **sham**?

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**NOTES:** Weights are from random effects analysis
Results (Musculoskeletal pain)

What is the efficacy of massage for treating pain...

...compared to an active comparator?

NOTES: Weights are from random effects analysis
What is the efficacy of massage for treating pain... 

...compared to an active comparator?

 Massage is significantly better
Overall outcomes

Overall, massage therapy decreases pain and improves function

<table>
<thead>
<tr>
<th></th>
<th>Pain</th>
<th>Activity</th>
<th>Sleep (Fatigue)</th>
<th>Mood (Anxiety)</th>
<th>Quality of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musculoskeletal Pain</td>
<td>🧡</td>
<td>🧡</td>
<td>🧡</td>
<td>🧡</td>
<td>🧡</td>
</tr>
<tr>
<td>Cancer Pain</td>
<td>🧡</td>
<td>🧡</td>
<td>🧡</td>
<td>🧡</td>
<td>🧡</td>
</tr>
<tr>
<td>Surgical Pain</td>
<td>🧡</td>
<td>🧡</td>
<td>🧡</td>
<td>🧡</td>
<td>🧡</td>
</tr>
</tbody>
</table>
Wayne Jonas, MD

“Massage therapy is the evidence-based new thinking that will, with other integrative, non-pharmacologic approaches, help pain medicine overcome the current opioid-focused old thinking that has devastated so many lives.”
3. How do these results affect the massage therapy profession?
Pain Management
An Opioid Epidemic in the US

Drug overdose deaths (United States, 2000-2014)

- Opioid prescriptions increased 60% (2000-2010)
- Patients often disappointed with biomedical treatment
- Prolonged use can worsen symptoms
- 15 million addicted

Drug overdose deaths (United States, 2000-2014)

- 200% increase
- 47,055 deaths
Nonpharmacologic therapy and nonopioid pharmacologic therapy were described as the preferred treatment for chronic pain. Even when opioids are prescribed, physicians are encouraged to prescribe in combination with nonpharmacologic therapy.

http://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm
“Recommendation 1: Given that most patients with acute or subacute low back pain improve over time regardless of treatment, clinicians and patients should select nonpharmacologic treatment with superficial heat (moderate-quality evidence), massage, acupuncture, or spinal manipulation (low-quality evidence).”
Effective January 1, 2015: For ambulatory care, critical access hospital, home care, hospital, nursing care center, and office-based surgery accreditation programs.

Standard PC.01.02.07: The [organization] assesses and manages the [patient’s] pain.

[Revised] Rationale for PC.01.02.07 [New for ambulatory care and office-based surgery practice]
The identification and management of pain is an important component of [patient]-centered care. [Patients] can expect that their health care providers will involve them in their assessment and management of pain. Both pharmacologic and nonpharmacologic strategies have a role in the management of pain. The following examples are not exhaustive, but strategies may include the following:

- Nonpharmacologic strategies: physical modalities (for example, acupuncture therapy, chiropractic therapy, osteopathic manipulative treatment, massage therapy, and physical therapy), relaxation therapy, and cognitive behavioral therapy
- Pharmacologic strategies: nonopioid, opioid, and adjuvant analgesics


[New] Note: Treatment strategies for pain may include pharmacologic and nonpharmacologic approaches. Strategies should reflect a [patient]-centered approach and consider the patient’s current presentation, the health care providers’ clinical judgment, and the risks and benefits associated with the strategies, including potential risk of dependency, addiction, and abuse.
4. How do we use this information in the schools?
Read the Pain Medicine massage articles
(www.massagetherapyfoundation.org)

**July Issue**


**August Issue**


**September Issue**
1. Watch Research Perch (MTF podcast) on this topic
2. Answer questions at the end
3. Discuss in class
Assignment: Practice describing the results

- Have students describe the results to each other as:
  - Fellow MTs
  - Clients
  - Other healthcare professionals
Assignment: Search database

Search the database on MTF website and find one article to review and describe.
Assignment: Use the results in marketing

Have the students develop marketing materials using research findings.
The press releases for these three meta-analyses reached an incredible number of people:

- The first on musculoskeletal pain reached: 87,871,352
- The second on cancer related pain reached: 88,899,856
- The third surgical pain reached: 89,602,570

Thank you: Ron Precht (AMTA), Joselyn Pysarchuk (AMTA), and Doug Cavarocchi (Samueli) for your marketing expertise!!
Are there any questions?

Jerrilyn Cambron  (jcambrong@nuhs.edu)