A Survey of the Management and Classification of Patients presenting with Neck Pain to Osteopathic and Physiotherapy Practices

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Introduction

• Neck pain is becoming an increasingly costly burden in the general population and often associated with considerable functional disability (Hoving et al., 2004), and is

• It is one of the most common complaints among working age women (Pierre Cote et al., 2008; Hoy, Protani, De, & Buchbinder, 2010).
Current Guideline - recommendations

• Multimodal approach in management of patients with non-specific neck pain (Guzman et al 2008)

• Strong evidence in support of the use of cervical manipulation and mobilisation for reducing neck pain, cervicogenic headache, and disability (Childs et al 2008)

• Pragmatic multimodal approach incorporating the use of manipulation, exercise, and soft-tissue for patients with non-specific neck pain (Bryans et al 2014)

• Little is known about how professions like Physiotherapy and Osteopathy are adhering to guidelines or are managing patients based on treatment classification in NZ and Australia
Purpose

• To investigate the management approaches of Australian and New Zealand osteopaths and physiotherapists in relation to patients presenting with neck pain.

• To investigate whether osteopaths and physiotherapists are sub-grouping their patients in a manner consistent with a treatment-based classification model in the management of patients with neck pain.

• To investigate whether the techniques applied by osteopaths and physiotherapists to patients with neck pain were in alignment with best-practice guidelines or current best-evidence.
Methods

- A questionnaire algorithm was developed and administered online to survey the management practices of patients with neck pain by osteopaths and physiotherapists.
- Data collection was conducted from September 2012 to April 2013.
- The practitioner assessed the patient then entered their diagnostic classification into survey monkey.
- They were blinded to the classification subgroup – the algorithm the would place their intervention data into one of five subgroups as per Fritz and Brennan’s algorithm (2007).

<table>
<thead>
<tr>
<th>Professional Body or Association</th>
<th>Number of Registrants / Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osteopathic Council of New Zealand</td>
<td>386</td>
</tr>
<tr>
<td>Australian Osteopathic Association</td>
<td>1300</td>
</tr>
<tr>
<td>New Zealand Manipulative Physiotherapists Association</td>
<td>410</td>
</tr>
<tr>
<td>Musculoskeletal Physiotherapy Australia</td>
<td>2073</td>
</tr>
</tbody>
</table>
Methods

Was the mode of onset for the patient from a motor vehicle accident or other whiplash mechanism?

Yes

Did the patient have any sharp shooting pain that appears to travel down the course of a nerve? The pain may have been accompanied by prickling, tingling, numbness, or muscle weakness.

Yes

Does the patient have any symptoms distal to the elbow(s) that appear to spread down the limb?

Yes

Was the patient’s chief complaint headaches with neck pain?

No

Has the patient had their current symptoms for less than 30 days?

Yes

On a pain scale of 0 to 10 is the patient’s initial pain rating greater than 7? Or if you use the Neck Disability Index does the patient have an initial score greater than 52?

Yes

Pain Control

No

Has the patient had their current symptoms for less than 30 days?

Yes

Is the patient’s headache affected by neck movement?

Yes

Is the patient over 60 years old?

No

Has the patient a diagnosis or symptoms of migraines?

Yes

Centralisation Interventions?

Exercise Interventions?

Mobility Interventions?

Cervicogenic Headache Interventions?

Non-Cervicogenic Headache Interventions?

Fritz and Brennan (2007)
Methods

Treatment grouping

Treatment Options Available for Selection in Survey

- Mobilisation or articulation
  - Mobilisation with Movement
- Manipulation (HVT)
  - Manipulation (LVT)
  - Manipulation (Recoil)
- Traction
  - Traction with Articulation
- Soft-tissue Ischemic Compression
  - Soft-tissue Muscle Energy Technique
  - Soft-tissue Strain
  - Counterstrain
  - Soft-tissue Cross-fibre
- Strengthening Exercises
  - Stretching Exercises

Mobilisation

Manipulation

Traction

Soft-tissue

Stretching and strengthening exercises

Figure 1 Amalgamation of Treatment Options
Statistics

- Descriptive analysis
- Chi Squared and Odd ratios
Results - demographics

- Response rate- osteopaths was 1.5% and for physiotherapists 0.9%

<table>
<thead>
<tr>
<th>Practitioner Information</th>
<th>Osteopaths</th>
<th>Physiotherapists</th>
<th>All Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td>13</td>
<td>12</td>
<td>52%</td>
</tr>
<tr>
<td>Australia</td>
<td>12</td>
<td>6</td>
<td>38%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>4</td>
<td>10%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
<td>13</td>
<td>52%</td>
</tr>
<tr>
<td>Male</td>
<td>14</td>
<td>9</td>
<td>48%</td>
</tr>
<tr>
<td>Years in Practice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5 yrs</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>6-10 yrs</td>
<td>5</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>11-15 yrs</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>16-20 yrs</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>21-30 yrs</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>&gt;31 yrs</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Results – patient demographics

- Patient demographics

<table>
<thead>
<tr>
<th>Age Bracket</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;15 yrs</td>
<td>0%</td>
</tr>
<tr>
<td>16-25 yrs</td>
<td>5%</td>
</tr>
<tr>
<td>26-35 yrs</td>
<td>10%</td>
</tr>
<tr>
<td>36-45 yrs</td>
<td>15%</td>
</tr>
<tr>
<td>46-55 yrs</td>
<td>20%</td>
</tr>
<tr>
<td>56-65 yrs</td>
<td>25%</td>
</tr>
<tr>
<td>66-75 yrs</td>
<td>30%</td>
</tr>
<tr>
<td>76-85 yrs</td>
<td>35%</td>
</tr>
<tr>
<td>86-95 yrs</td>
<td>40%</td>
</tr>
</tbody>
</table>

- Osteopaths
- Physiotherapists
Results - Percentage distribution of patients by presenting complaint as determined by therapist.

<table>
<thead>
<tr>
<th>Presenting Complaint</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neck Pain only</td>
<td>Osteopaths</td>
</tr>
<tr>
<td>Neck Pain with Headache</td>
<td>Physiotherapists</td>
</tr>
<tr>
<td>Neck Pain with Shoulder and Arm Symptoms</td>
<td></td>
</tr>
<tr>
<td>Neck Pain with Headache, and Shoulder and Arm Symptoms</td>
<td></td>
</tr>
</tbody>
</table>
Results – Percentage distribution of patients by treatment received in each anatomical region
The presenting complaint assignment vs TBC subgroups
Results Technique

• Osteopaths were 13 times more likely to apply thoracic mobilisation ($p<0.01$), were 130 times more likely to address the thoracic region with soft-tissue interventions ($p<0.01$), and were 2 times and 22 times more likely to apply traction to the cervical and thoracic regions respectively ($p<0.05$).

• Osteopaths were 4 times more likely to address the thoracic region with stretching and strengthening exercise interventions ($p<0.05$).

• Osteopaths were 7 times and 6 times more likely to utilise cervical and thoracic manipulation respectively ($p<0.01$).

• For mobilisation, physiotherapists were 2 times more likely to apply cervical mobilisation ($p<0.05$).
Matched interventions

- **Cervicogenic Headache subgroup**
  - Osteopaths were 20 times more likely to apply thoracic mobilisation ($p<0.05$)

- **Mobility subgroup**
  - Osteopaths were 23 times more likely to apply thoracic mobilisation, 3 times more likely to apply thoracic manipulation, and 7 times more likely to utilise thoracic stretching and strengthening exercises ($p<0.05$)
  - In the mobility subgroup physiotherapists were 7 times more likely to apply thoracic mobilisation ($p<0.05$)

- **Exercise subgroup**
  - Osteopaths were 53 times more likely to apply thoracic soft-tissue ($p<0.05$)

- **Centralisation subgroup**
  - Osteopaths were 4 times more likely to apply cervical traction, and 33 times more likely to apply thoracic mobilisation ($p<0.05$)
Discussion

• In relation to the question: what approaches do Australian and New Zealand osteopaths and physiotherapists apply in relation to patients presenting with neck pain?

• Osteopaths applied a more regional approach when addressing the treatment of patients presenting with neck pain.
• Both disciplines utilised a multimodal style of care – including mobilisation, soft-tissue, and stretching and strengthening exercises.
• Consistent with the guidelines
Discussion

• Are osteopaths and physiotherapists sub-grouping their patients in a manner consistent with a treatment-based classification model in the management of patients with neck pain?
  • The results of this study indicate that practitioners were not employing interventions in groupings that are consistent with those of a treatment-based classification system suggested in the literature.
  • There was a lack of obvious cohesive groupings of interventions in relation the subgroups of ‘Centralisation’, ‘Exercise’, ‘Mobility’ and ‘Cervicogenic Headache’.
Discussion

• To investigate whether the techniques applied by osteopaths and physiotherapists to patients with neck pain were in alignment with best-practice guidelines or current best-evidence.

• Regional application of interventions

• Multimodal approach

• Research-practice gap
Conclusion

• This study highlights that differences exist in the utilisation of interventions between osteopaths and physiotherapists.

• The practice patterns demonstrated by this study suggest that osteopaths and physiotherapists utilise a multimodal approach to the management of patients presenting with neck pain employing a range of interventions widely supported in the literature.

• Practitioners were not subgrouping their patients along the lines of a known classification system.
Questions