

# Understanding the user experience, barriers and facilitators of using a clinical tool-kit app to support evidence-based management of neck pain

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## BACKGROUND

- Neck pain is common and disabling.
- Systematic reviews suggest that effective management approaches, such as exercise, improve pain and function and are underutilized in practice.
- A knowledge translation ‘app’ was developed for physiotherapists to facilitate evidence-based practice.
- An understanding of the user experience, barriers and facilitators to using the app was needed prior to implementing more widely and to inform updates.

## PURPOSE

- 1) Understand the user experience of physiotherapists and physiotherapy students using the “Manual therapy and exercise for neck pain: clinical treatment tool-kit”.
- 2) Identify barriers and facilitators to using the clinical tool-kit in clinical practice.

## METHODS

- Qualitative interviews: 9 physiotherapists and 9 physiotherapy students using a combination of “think-aloud” and interpretive description.
- Morville’s User Experience Honeycomb and the Theoretical Domains Framework informed the interview guide.
- Interviews were audiotaped, transcribed, and coded independently by two authors.
- A constant comparative approach was used for analysis.



Morville's User Experience Honeycomb

### Theoretical Domains Framework

Skills

Knowledge

Nature of Behaviors

Behavioral Regulation

Emotion

Social Influences

Environmental context and resources

Memory, attention and decision process

Motivation

Beliefs about consequences

Beliefs about capabilities

Social/professional role

# The Clinical ToolKit: How it works

## STEP 1: IDENTIFY YOUR PATIENT

### Neck Pain

#### Neck Pain Alone

- Acute
- Chronic
- Unspecified

#### Neck pain with cervicogenic headache

- Acute
- Chronic

#### Whiplash associated disorder (WAD)

- Acute
- Chronic

#### Neck pain with radiculopathy

- Acute

## STEP 2: DETERMINE THE EVIDENCE

Author, year of original studies	Participant characteristics	Intervention	Comparison	Pain	Function/ Disability	GPE	Patient Satisfaction	QoL
Bronfort 2001 <sup>[6]</sup> , Hoving 2002 <sup>[6]</sup> , Jull 2002 <sup>[18]</sup>	Subacute/chronic neck pain with or without CGH	Manipulation or mobilization and exercise	Primarily exercise alone	★★, ○○○○	○○, ○○○○	○○, ○○○○		○○, ○○○○
Bronfort 2001 <sup>[6]</sup> , Skargren 1998 <sup>[14]</sup>	Chronic neck pain	Manipulation or mobilization and exercise	Primarily manipulation or mobilization alone	★★★★				★★★★
Ylinen 2003 <sup>[17]</sup>	Chronic neck pain	Manipulation, mobilization, and exercise	Adjunct advice including general exercise	★★★★	★★★★			

## STEP 3: INFORM YOUR TECHNIQUE

### Manual therapy and exercise

#### Bronfort 2001<sup>[3]</sup>

- Spinal manipulation to the cervical and thoracic spine (Haldeman 1991<sup>[4]</sup>) with light soft-tissue massage as indicated to facilitate the spinal manipulative therapy
- Warm-up on a stationary bike with arm levers
- Light stretching as part of warm-up (a-c)



(a) Upper fibres of trapezius stretch



(b) Levator scapulae stretch



(c) Scalene stretch

- Upper-body strengthening exercises (Dyrrsen 1989<sup>[5]</sup>)



- Push-ups (d)

## STEP 4: CONSIDER DOSAGE

Disorder Type	Chronic neck pain
Treatment (T) / Comparison (C)	T: Spinal manipulation and massage to the cervical and thoracic spine and exercise therapy C: <ul style="list-style-type: none"> <li>• (a) Exercise therapy using MedX equipment</li> <li>• (b) Spinal manipulation and massage + detuned microcurrent</li> </ul>
Frequency	20 sessions over 11 weeks
Dose	15 minutes of manipulation and massage 45 minutes of exercise therapy Dumbbell shoulder exercises: 2 x 15-30 repetitions with 2-10lbs Pulley exercises: 1.25-10 lbs resistance
Duration	11 weeks, 20 sessions
Follow-up	52 and 104 weeks

## STEP 5: INDIVIDUALIZE TREATMENT

Individualized treatment takes into account the patient, practice setting, and practitioner.

Patient	Practice Setting	Practitioner
patient wishes	environment	clinical knowledge
patient beliefs	governance	clinical skill
circumstance	available tools	practitioner attitude



# Results – User experience themes

**Useful** - Most participants expressed that the toolkit has potential to be useful for informing their practice for people with neck pain.  
*“It would be nice to have a tool, developed by physiotherapists to help guide physiotherapy practice. I think it’s really really useful.”*

**Useable** - Participants identified improvements to the legend and navigation between steps as important for improving usability  
*“Usability is the biggest barrier right now for that app. And so that should improve.”*

**Desireable** - Most participants liked the app because it provides a quick reference to the evidence on neck pain management.  
*“I just think it’s valuable to kind of have that quick snap shot. Like if I don’t have to go back and read a full article. Spend, whatever it is – half an hour, you probably don’t have that time in a day between patients or anything like that.”*

**Findable** - Many participants expressed concerns with difficulty navigating within the app to find the information they were looking for.  
*“I imagine step 1, 2, 3 and 4 are meant to be really seamless, right, for the practitioner. And it didn’t really seem that seamless to me,...”*

**Accessible** - All participants reported no difficulty gaining access to the app and were able to follow the direct link provided.

**Credible** - A few participants had difficulties understanding where the information was coming from and questioned the selection process of the articles. All participants agreed that the toolkit should be updated regularly to remain a credible resource.

**Valuable** - Many saw value in the clinical toolkit as a way to stay up to date with the literature without having to engage in extensive searches on their own. Experienced therapists suggested it helped confirm current practices, while physiotherapy students suggested it provided treatment ideas.



# Results – barriers and facilitators to using the app

## FACILITATORS

- Perceived value of an app that summarizes a large volume of journal articles quickly.
- Readiness of physiotherapists to use evidence and technology in practice.
- Helpful for confirming current practice (for clinicians) and to inform treatment decisions (for students).

## BARRIERS

- Concern that patients may view the use of app in practice as unprofessional.
- Difficulties navigating between steps of the app.
- Time required to navigate through the app.

## Conclusions

- Physiotherapists and physiotherapy students are ready to embrace technology in practice and have a positive attitude towards evidence-based practice.
- The manual therapy and exercise for neck pain clinical tool-kit was perceived as useful and valuable by participants.
  - Practicing clinicians found the tool-kit helpful for confirming current practices.
  - Physiotherapists found the clinical tool-kit helpful for informing treatment decisions.
- Recommendations for easier navigation and an improved legend will be integrated in the next iteration of the tool-kit app.