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Characteristics of a new episode of neck pain

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ABSTRACT

We report on the demographic and clinical characteristics of patients seeking manual therapy care for a new episode of non-specific neck pain and report on characteristics associated with higher levels of pain and disability in these patients. Demographic and clinical data were collected from patients who enrolled in a clinical trial of manipulation for neck pain. A profile of these patients was formulated using descriptive statistics. Multivariate linear regression models were used to describe the relationship between patient characteristics and severity of pain and disability. Patients with a new episode of non-specific neck pain reported pain intensity of 6.1 ± 2.0 (mean ± SD) on a 0–10 numerical scale and disability scores of 15.7 ± 7.4 (Neck Disability Index/50). Sixty-three percent had a prior history of neck pain. Concomitant symptoms were highly prevalent including upper limb pain (80%), headache (65%), upper back pain (64%), lower back pain (39%), dizziness (31%) and nausea (23%). There was a strong association between pain intensity and disability ($p < 0.01$). More severe pain was also associated with not having concomitant back pain ($p = 0.01$) More severe disability was also associated with poor general health ($p < 0.01$), nausea ($p < 0.01$), smoking, ($p = 0.02$) low SF-12 mental health score ($p = 0.02$), and shorter duration of symptoms ($p = 0.03$). Patients with a new episode of neck pain, and deemed suitable for treatment with neck manipulation reported moderately high intensity pain and disability with widespread and frequent concomitant symptoms.

Our recent clinical trial (Leaver et al., 2010) provided an opportunity to profile patients with recent onset neck pain, who were seeking care from manual therapists in a primary care setting. The baseline characteristics of the patients enrolled in this trial provide insights into the severity and complexity of a new episode of neck pain, and into the demographic characteristics of users of manual therapy care.

Neck pain is a prevalent condition (Cote et al., 1998) and is a common reason for seeking care from manual therapists such as physiotherapists and chiropractors. It is a condition that is labelled in terms of the anatomical distribution of a symptom. As such, the term *neck pain* encompasses a broad range of different clinical presentations. Whilst there have been many anecdotal descriptions published of the features of neck pain (Rao, 2002) there are few quantitative data about the clinical characteristics of patients who seek manual therapy care for a new episode of neck pain. Better understanding of the burden of neck pain and the determinants of its severity, and associated disability might help identify individuals who need more intensive intervention and guide research into identification of different subgroups of acute neck pain.

In the majority of cases of neck pain, a specific cause cannot be identified and the terms *non-specific* (Hoving et al., 2001) or *mechanical neck pain* are used. There is a tendency within the neck pain literature for neck pain studies to enrol heterogeneous patient groups that present with a range of concomitant regional pain complaints (headache, back pain, shoulder/arm pain) as well as other concomitant symptoms (dizziness/light headedness, nausea). These different presentations of non-specific neck pain are believed to have different mechanisms and each might follow a different clinical course. Understanding the prevalence of these different clinical presentations in a primary care setting and the influence that these clinical features might have on the severity of neck pain and disability is highly likely to influence treatment selection.

We report on the clinical characteristics of patients seeking manual therapy care for a new episode of non-specific neck pain and explore whether any patient characteristics were associated with more severe pain intensity and disability.

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1. Methods

This study was conducted within the framework of a randomised controlled trial (Leaver et al., 2010) (Australian New Zealand Clinical Trials Registry, ACTRN12606000417583). Approval was granted for this study by the University of Sydney Human Research Ethics Committee.

1.1. Participants

Consecutive adult patients (aged 18–70 years) who were seeking manual therapy care for a new episode of neck pain were recruited from 11 physiotherapy and chiropractic clinics in Sydney, Australia. A new episode was defined as neck pain of <3 months duration preceded by at least one month without neck pain. Exclusion criteria were; whiplash associated disorder or other significant trauma, primary complaint of upper limb pain, signs of specific or serious pathology (e.g malignancy, infection, inflammatory disorder, fracture, radiculopathy or myelopathy), history of neck surgery, neck pain of less than 2 out of 10 on a numerical rating scale, and not literate in English. Participants also had to be deemed suitable for treatment with neck manipulation by their treating practitioner to meet the eligibility criteria of the concurrent randomised controlled trial.

1.2. Practitioners

We invited practitioners who were listed in the directories of the physiotherapy and chiropractic professional associations to participate in the study. Assistance was also sought with practitioner recruitment from opinion leaders and academics from these professions. All participating practitioners had post-graduate university qualifications in manual and manipulative therapy.

1.3. Descriptive measures

Screening questionnaires were completed by the treating practitioners for consecutive patients presenting with neck pain. Eligible patients provided written, informed consent and completed a series of assessment questionnaires. Demographic characteristics were collected including age, sex, employment status, level of education, smoking habit, self-rated general health, and whether a compensation claim for neck pain had been lodged. Self-rated general health was assessed using Item 1 of the 12-Item Short-Form Health Survey (SF-12) (Ware et al., 1996). Employment status and level of education were determined using categories described by Kenny (2000) and using items from the Australian Census 2001 (Trewin, 2000) respectively. Clinical characteristics collected included; the intensity and duration of neck pain, past history and previous sick leave for neck pain, use of analgesics, presence of concomitant symptoms (from a checklist containing upper limb pain, upper back pain, lower back pain, headache, dizziness/lightheadedness, and nausea), Neck Disability Index (NDI) (Vernon and Mior, 1991), and SF-12 physical (SF-12PCS) and mental health (SF-12MCS) component scores (Ware et al., 1996).

1.4. Statistical analysis

The demographic and clinical profile of patients seeking manual therapy care for neck pain was summarised using descriptive statistics. The relationship between these characteristics and levels of pain and disability was determined using multivariate linear regression models. The dependent variables were pain (Numerical Rating Scale, 0–10) and disability (Neck Disability Index, 0–50). Univariate analyses were performed on each of the variables to evaluate their relationship with pain and disability. Characteristics with significant associations ($p < 0.1$) with the dependent variable were selected for multivariate analysis. Stepwise linear regression ($p < 0.05$ to enter, $p > 0.1$ to remove) was performed for the retained variables. Beta-coefficients were reported representing the change in the number of standard deviations of the dependent variable associated with each standard deviation of change in the patient characteristic. Level of education was dichotomised into participants with trade qualification or lower and diploma qualification or higher. Work status was dichotomised into two variables, the first being whether the participant was employed at the time of onset of neck pain, the second variable being whether their work status had changed due to the presence of neck pain.

2. Results

Recruitment of 181 participants took place between October 2006 and June 2008. Participants were patients who were recruited by 7 physiotherapists ($n = 125$) and 5 chiropractors ($n = 56$) from 11 primary care clinics. Two hundred and thirty-seven patients completed the screening procedure. Of these, 27 did not meet the criteria for a new episode of non-specific neck pain, 10 declined to participate and 19 were considered unsuitable for manipulation. All participants completed the assessment booklets. Missing data were retrieved by telephone contact with the participant. In doing so we were able to achieve a complete data set for all participants.

The demographic and clinical characteristics of patients who sought manual therapy care for a new episode of neck pain are presented in Table 1. Patients ranged in age from 18 to 67 years

Table 1
Characteristics a new episode of non-specific neck pain and univariate associations with pain and disability. Data are N (%) or mean ± SD.

Variable	Total ($n = 181$)	Pain p value	Disability p value
Age (years)	38.8 ± 10.7	0.382	0.113
Sex: number of females (%)	117(64.6)	0.310	0.062*
University degree or higher	109(60.2)	0.818	0.531
Employed	150(82.9)	0.155	0.464
Changed work status due to neck pain	27(14.9)	0.678	0.994
Smoker	17 (9.4)	0.094	<0.001*
Compensation claim for neck pain	4(2.2)	0.169	0.181
Self-rated health		0.480	<0.001*
Poor	2(1.1)		
Fair	16(8.8)		
Good	80(44.2)		
Very good	64(35.4)		
Excellent	19(10.5)		
Pain intensity[a]	6.1 ± 2.0		<0.001*
Pain duration (days)	19.5 ± 20.1	0.092*	0.046*
Neck Disability Index[b]	15.7 ± 7.4		<0.001*
SF-12 Physical Component Scale[c]	43.5 ± 8.2		<0.001*
SF-12 Mental Component Scale[c]	47.3 ± 10.6	0.183	0.001*
Concomitant symptoms			
Shoulder / arm	144(79.6)	0.514	0.452
Upper back	115(63.5)	0.523	0.008*
Lower back	71(39.2)	0.082*	0.833
Headache	117(64.6)	0.390	0.024*
Dizziness	56(30.9)	0.760	0.016*
Nausea	41(22.7)	0.144	<0.001*
Past history of neck pain	114(63.0)	0.333	0.124
Past sick leave for neck pain	57(31.5)	0.917	0.086*
Use of analgesics	30(16.6)	0.013*	0.001*

*$p < 0.1$.
[a] Numerical Rating Scale (0 = no pain to 10 = worst possible pain).
[b] Neck Disability Index (0 = no disability to 50 = extreme disability).
[c] SF-12 Physical and Mental Component Summaries. (SF-12 scores are normalized based on general population, Mean = 50, SD = 10).