

THESIS REVIEW

Vos K. *Acute Neck Pain in General Practice*. PhD Thesis.
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In terms of musculoskeletal disorders, the incidence of neck pain is surpassed only by low back and shoulder conditions. Much like back pain, neck pain can lead to functional limitations, disability, lost work time, and result in a huge economic and societal burden. In the introduction to his thesis, Dr. Kees Vos defines neck pain as any pain originating from the cervical spine that can be caused by dysfunction of the intervertebral discs, ligaments, zygapophyseal joints, or soft tissue structures. Unfortunately, the exact pathoanatomical cause of neck pain often cannot be identified. While there has recently been an increase of evidence supporting the effectiveness of physical therapy in the management of neck pain¹⁻³, no consensus exists regarding practice guidelines or even on the natural course of the disorder. The main objective for this thesis was to investigate the course of acute neck pain following a visit to the general practitioner, as well as, to identify prognostic variables with regard to outcome.

In Chapter 1, the author provides details regarding the prevalence, risk factors, diagnosis, prognosis, and treatment of neck pain. At the close of this introductory chapter, the lack of evidence with regard to the course of neck pain is established substantiating the need for the author's current study. The remainder of the thesis consists of 6 prospective studies investigating the use of selected questionnaires and investigations into the overall clinical course of neck pain in general medical practice. Data for this thesis was collected from a cohort of 187 patients in the Rotterdam area recruited by their general practitioner (GP). Inclusion criteria consisted of acute neck pain of < 6 weeks duration, age > 18, and adequate knowledge of the Dutch language. Patients with identified causes of neck pain such as tumors, rheumatic disease, or visceral referred pain were excluded.

Chapter 2 consists of a reliability and responsiveness study examining the Dutch version of the Neck Disability Index (NDI). Patients completed the Dutch version of the NDI at baseline. After one week 86 patients were re-evaluated and again completed the NDI to determine test-retest reliability and responsiveness using the perceived recovery scale as a reference standard. Following analysis it was found that the test-retest reliability was "very good" with an ICC of 0.90 (95% CI: 0.82–0.95). Responsiveness was found to be "good" with patients identified as having experienced clinical improvement reporting an average change of 7.1 points, whereas those remaining stable reporting an average change of 0.3 points.

Chapter 3 examines the use of the Acute Low Back Pain Screening Questionnaire (ALBPSQ) for identifying those patients most likely to experience sick leave due to their neck pain. The ALBPSQ consists of 21 items addressing areas such as function, fear-avoidance beliefs, work, and pain. For the purpose of this study, the questionnaire was translated into Dutch. From the original cohort of 187, 180 patients completed the ALBPSQ and numeric pain rating scale (NPRS) at baseline. To determine test-retest reliability 89 patients completed the ALBPSQ again after one week yielding an ICC of 0.85 (95% CI: 0.73–0.92). In terms of predicting sick leave a cut-off score of 72 was most effective in predicting the presence (sensitivity 77%) or absence (specificity 62%) of long-term sick leave. Based on these results it was concluded that the ALBPSQ presents a potential tool for identifying those with neck pain who are at risk for sick leave.

Chapters 4 and 5 deal with the clinical course, prognostic variables, and management strategies recommended in general practice. Patients were assessed at baseline and followed for one year. In terms of the clinical course it was found that at one year 76% of the initial group reported recovery. However, 47% of respondents still reported experiencing symptoms. The vast majority of those individuals that were on sick leave at baseline (35%) had returned to work with only 5% remaining on leave at one year. Following analysis, several prognostic items were identified with regard to recovery and long-term sick leave. The item most associated with recovery was advice to "wait and see" given by the general practitioner (OR 6.68, 95% CI: 1.58–31.80). Items including the presence of radiating pain, long-term complaints, and female gender were all associated with a decreased chance of recovery. Patient referral (OR 2.76, 95% CI: 1.01–8.39) or the scheduling of a follow-up appointment (OR 1.7, 95% CI: 1.11–2.49) was most associated with sick leave. With regard to management strategies it was found that GPs tend to either give advice such as "wait and see" and "stay active" or refer to physical therapy. Patients not referred to physiotherapy were often prescribed medications such

as non-steroidal anti-inflammatories or muscle relaxants as supplements to their treatment. Reports of recovery at one year were similar between groups with 74% of those referred to physical therapy and 79% of those not referred reporting recovery.

In Chapter 6, the author compares levels of disability in those with acute neck pain stemming from a motor vehicle accident (MVA) compared to patients with other reported causes. Out of the original 187 subjects followed throughout this thesis, 42 with neck pain secondary to an MVA were selected to serve as the subgroup. Baseline data indicated that the MVA subgroup had a lower mean age, more frequent headaches, and a significantly higher NDI score when compared to the remaining 145 subjects in the original sample. At the one-year follow-up it was found that 63% of patients in the MVA subgroup reported continued symptoms compared to 40% in the non-MVA group. NDI scores at one year were also found to be significantly higher in the MVA subgroup when compared to the non-MVA group (11.0 versus 7.1). Additionally, following analysis it was found that two variables had significant positive correlations with long-term neck pain, which were “self-reported MVA at baseline” (OR 2.51, 95% CI: 1.09–5.80) and “duration of neck complaints longer than two weeks” (OR 3.36, 95% CI: 1.62–6.94). The results of this study indicate that individuals experiencing neck pain stemming from an MVA may experience greater levels of pain and dysfunction when compared to patients whose symptoms were associated with other causes. Additionally, the report of an MVA by the patient may serve as an important factor in predicting long-term neck pain.

Chapter 7 examines the ability of the GP to predict the prognosis of patients presenting with acute neck pain. During baseline assessment GPs were asked to provide their assessment as to whether or not the patient was at risk for developing chronic neck pain lasting greater than 6 months. GPs were to report if they felt the patient was most likely, likely, not likely, or not likely at all to develop chronic neck pain. Patients were dichotomized by having the patient answer the question, “do you still have or are you again having neck pain.” Following analysis it was found that positive predictive values and negative predictive values in terms of the GP’s assessment were 0.86 and 0.64, respectively. Additional multivariate analysis revealed that prediction of chronic neck pain by the GP was associated with an odds ratio of 14.58. Based on the results GPs were found to have good ability to predict the risk of chronic neck pain in patients presenting acutely.

Given that neck pain has such a high prevalence it is disconcerting that a considerable knowledge gap exists regarding the clinical course and prognosis of the condition. Dr. Vos’ results aid in further elucidating the clinical course of neck pain as well as the identification of variables associated with sick leave or increased risk of developing chronicity. Specifically, variables such as long-term complaints, history of MVA, and the need for referral or follow-up all may help lead the clinician to suspect that there exists a risk that the patient may develop chronic neck pain. However, we should note that rather than being predictive variables, the need for referral or follow-up visits may also indicate higher disability due to neck pain logically expected to result in a greater potential for chronic complaints. Similarly, we should critically consider the non-significant between-group difference between those patients referred or not referred to physical therapy to perhaps be based on different baseline report of pain and disability? Regarding outcome measures, Dr Vos demonstrated that the NDI remains a reliable and responsive tool when translated into another language and introduced the potential for the ALBPSQ to predict absence from work. While the results of this thesis serve to contribute to the body of knowledge surrounding neck pain, the generalizability may be reduced based on the fact that the country of origin utilizes a public health care system. Dr. Vos also acknowledges that his results are perhaps most relevant in that they serve to create hypotheses for future research including the development of more precise manners of identifying those at risk for developing chronic neck pain. The goal of this thesis was to investigate the course of acute neck pain. While this goal was achieved, the mode and effectiveness of treatments delivered for neck pain following referral were not reported. Recently a classification system has been proposed to aid in subgrouping patients with neck pain according to the most appropriate treatment⁴. A recent investigation into this proposed system revealed positive potential⁵. It would seem advantageous for future research to include treatment-based subgrouping to discover what impact this may have on the prognosis and course of neck pain rather than as in thesis to use a “non-diagnosis” of non-specific, acute neck pain.

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REFERENCES

1. Cleland JA, Childs JD, Fritz JM et al. Development of a clinical prediction rule for guiding treatment of a subgroup of patients with neck pain: Use of thoracic spine manipulation, exercise, and patient education. *Phys Ther* 2007; 87:9–23.
2. Cleland JA, Glynn P, Whitman JM et al. Short-term effects of thrust versus nonthrust mobilization/manipulation directed at the thoracic spine in patients with neck pain: A randomized clinical trial. *Phys Ther* 2007;87:431–440.
3. Hoving J, Koes B, de Vet H et al. Manual therapy, physical therapy, or continued care by a general practitioner for patients with neck pain: A randomized controlled trial. *Ann Intern Med* 2002;136:713–722.
4. Childs JD, Fritz JM, Piva SR et al. Proposal of a classification system for patients with neck pain. *J Orthop Sports Phys Ther* 2004;34:686–700.
5. Fritz JM, Brennan GP. Preliminary examination of a proposed treatment-based classification system for patients receiving physical therapy interventions for neck pain. *Phys Ther* 2007;87:513–524.