



Observational study

Treatment success in neck pain: The added predictive value of psychosocial variables in addition to clinical variables



Ruud Groeneweg^{a,b,c,d,*}, Tsjitske Haanstra^e, Catherine A.W. Bolman^d,
Rob A.B. Oostendorp^{b,f}, Maurits W. van Tulder^a, Raymond W.J.G. Ostelo^{a,e}

^a Department of Health Sciences & EMGO Institute for Health and Care Research, Faculty of Earth & Life Sciences, VU University, Amsterdam, The Netherlands

^b Radboud University Nijmegen Medical Centre, Scientific Institute for Quality of Health Care, Nijmegen, The Netherlands

^c Avans+, University for Applied Sciences, Breda, The Netherlands

^d Faculty of Psychology & Educational Sciences, Open University of the Netherlands, PO Box 2960, Heerlen 6401 DL, The Netherlands

^e Department of Epidemiology and Biostatistics AND the EMGO Institute for Health and Care Research, VU University Medical Centre, Amsterdam, The Netherlands

^f Free University of Brussels, Faculty of Medicine and Pharmacology, Department of Manual Therapy, Brussels, Belgium

H I G H L I G H T S

- Psychosocial variables may influence outcome of treatment of neck pain.
- Treatment expectancy predicted success in neck pain added to clinical variables.
- Health locus of control and fear avoidance beliefs had no additional prediction.

A R T I C L E I N F O

Article history:

Received 1 September 2016

Accepted 7 October 2016

Keywords:

Neck pain

Manual therapy

Physical therapy

Treatment outcome expectancy

Locus of control

Fear avoidance beliefs

A B S T R A C T

Background and aims: Identification of psychosocial variables may influence treatment outcome. The objective of this study was to prospectively examine whether psychosocial variables, in addition to clinical variables (pain, functioning, general health, previous neck pain, comorbidity), are predictive factors for treatment outcome (i.e. global perceived effect, functioning and pain) in patients with sub-acute and chronic non-specific neck pain undergoing physical therapy or manual therapy. Psychosocial factors included treatment outcome expectancy and treatment credibility, health locus of control, and fear avoidance beliefs.

Methods: This study reports a secondary analysis of a primary care-based pragmatic randomized controlled trial. Potential predictors were measured at baseline and outcomes, in 181 patients, at 7 weeks and 26 weeks.

Results: Hierarchical logistic regression models showed that treatment outcome expectancy predicted outcome success, in addition to clinical and demographic variables. Expectancy explained additional variance, ranging from 6% (pain) to 17% (functioning) at 7 weeks, and 8% (pain) to 16% (functioning) at 26 weeks.

Locus of control and fear avoidance beliefs did not add significantly to predicting outcome.

Conclusions: Based on the results of this study we conclude that outcome expectancy, in patients with non-specific sub-acute and chronic neck pain, has additional predictive value for treatment success above and beyond clinical and demographic variables.

Implications: Psychological processes, health perceptions and how these factors relate to clinical variables may be important for treatment decision making regarding therapeutic options for individual patients.

© 2016 Scandinavian Association for the Study of Pain. Published by Elsevier B.V. All rights reserved.

* Corresponding author at: De Boelelaan 1085, 1081 HV Amsterdam, The Netherlands.

E-mail addresses: r.groeneweg@vu.nl (R. Groeneweg), t.haanstra@vumc.nl (T. Haanstra), Catherine.Bolman@ou.nl (C.A.W. Bolman), rob.oostendorp@planet.nl (R.A.B. Oostendorp), maurits.van.tulder@vu.nl (M.W. van Tulder), r.ostelo@vu.nl (R.W.J.G. Ostelo).

1. Introduction

Neck pain is an important individual, social and economic health problem. As neck pain ranks fourth worldwide as a cause of Years Lived with Disability [1], it is clinically and economically desirable to prevent complaints becoming chronic. However, if complaints persist for more than six months the average severity of neck pain remains fairly stable [2].

While there are several interventions for neck pain, it is unclear which interventions are most effective and whether particular subgroups of neck pain patients benefit more from specific interventions [3–5]. Besides intervention-specific factors (biomechanical and neurophysiological effects [6,7]), the effectiveness of treatment and outcomes related to neck pain may also be influenced by psychosocial factors. One model that takes all of these factors into account is the biopsychosocial disease model [8]. Psychological and social factors have been consistently associated with the onset and persistence of neck pain [9–11], indicating that these factors could be used as predictors of outcome. Importantly, (some) psychosocial factors can potentially be modified [12–14], implying that early identification of patients at risk for poor outcomes or maintenance of chronic symptoms might potentially aid treatment [9,15–18]. Psychosocial factors hypothesized to predict the effects of neck pain treatment include treatment outcome expectancy, treatment credibility, locus of control and fear avoidance beliefs.

Numerous studies in the fields of rehabilitation [19–25], psychotherapy [26–29] and placebo research [30,31] have shown that expectations of treatment outcome may affect the prognosis of (neck) pain. The ‘response expectancy theory’ attempts to explain the relationship between expectations and outcomes. This theory states that a person’s expectations will affect their experiences, a process that may (possibly) underlie the placebo and nocebo effect. This conclusion is supported by research showing that influencing expectations can change subjective and physiological responses [30,32], effects confirmed in functional magnetic resonance imaging (fMRI) studies [33]. The Credibility and Expectancy scale [34] was developed on the premise that credibility is influenced by a patient’s logical thought, while expectation is functionally related to affective processes similar to hope and confidence.

According to Delsignore et al. [35], locus of control includes explicit prognostic beliefs, meaning the degree to which individuals attribute their health to their own behavior (internal locus of control) or to factors beyond their personal control (external locus of control). Several studies have reported an association between low back pain and locus of control [36–40]. Overall, patients with higher internal LOC exercised more frequently, had better outcomes and were more likely to return to work. In cervicogenic headache [41], high internal LOC was associated with a reduction in headache frequency in patients treated with manipulative therapy in combination with exercises, compared to manipulative therapy alone.

Fear of movement can best be defined as ‘fear that arises when stimuli related to pain are seen as a major threat’ [42]. Considered important mediators of the development and maintenance of chronic pain [43]. Investigations of neck pain [44–49] have identified fear avoidance beliefs as risk factors for neck pain and disability [45–49], working capacity [45,47] and poor outcome [44].

The objective of this study was to determine whether treatment outcome expectancy, treatment credibility, locus of control and fear avoidance beliefs predict treatment success of manual therapy and physical therapy for patients with non-specific neck pain. In order to investigate the relative importance of these variables, the predictive value and cut-off points of treatment success were evaluated in addition to known predictive demographic and clinical variables commonly used in clinical practice. A secondary aim was to investigate whether type of treatment, specifically physical

therapy (active exercise) versus manual therapy (passive mobilization), is an effect modifier in the relationship between the psychosocial factors and treatment outcome.

2. Methods

2.1. Design and setting

This study is a secondary analysis of a pragmatic randomized controlled trial conducted in primary care practices in the Netherlands.

2.2. Study population

Patients included were aged 18–70, with non-specific sub-acute and chronic neck pain, with or without radiation to the shoulder region or the upper extremities, and with or without headache. Exclusion criteria were presence of red flags [50], pregnancy, whiplash trauma as cause, and treatment for neck pain in the previous three months. All patients gave written informed consent.

2.3. Interventions

Patients participating in the randomized controlled trial received either manual therapy or physical therapy. In the manual therapy arm, the manual therapist performed a number of protocol-based patient assessments that included recording the natural asymmetry of shape, posture and movement. This also allows the direction and position of movement axes in the joints of the patient to be determined. Passive mobilization techniques were performed very gently and were (generally) pain-free. Manual therapists also commonly offer advice on activities of daily living and lifestyle, and recommend home exercise and exercises. In the physical therapy arm, treatment consisted of active exercises aimed at improving strength, mobility and movement coordination, which included exercises to improve posture and to promote relaxation, manual traction for pain reduction, and massage therapy for relaxation. Specific manual mobilization techniques, known as manual therapy techniques, were not part of the physical therapy. The physical therapist spent at least two-thirds of treatment time on active exercise. Giving advice on activities of daily living and lifestyle, and recommending home exercise is common and was therefore equal in both conditions.

2.4. Study overview (measurement at baseline and at follow-up at 7 and 26 weeks)

At baseline, a range of demographic and clinical variables commonly queried in daily clinical practice were measured, including age, gender, previous symptoms, pain, functioning and general physical and mental health, and co-morbidity. The psychosocial variables that are the main focus of this study were also measured at baseline with the exception of expectancy and credibility, which were measured after the first treatment session. The reasoning behind this choice was that we wished to measure ‘well-informed’ expectancies and credibility, and therefore preferred to perform this measurement only after the treatment rationale had been explained to the patient. Follow-up assessments were carried out at 7 (short-term) and 26 weeks (long-term) after baseline (as ‘standard’ measurement moments in the randomized controlled trial primarily focused on effectiveness), with follow-up questionnaires that contained a measure of general perceived effect, the neck disability index and the numerical rating scale pain.

Download English Version:

<https://daneshyari.com/en/article/8623348>

Download Persian Version:

<https://daneshyari.com/article/8623348>

[Daneshyari.com](https://daneshyari.com)