

Expectations of Qigong and Exercise Therapy in Patients With Long-term Neck Pain: An Analysis of a Prospective Randomized Study

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ABSTRACT

Objective: The aim of the present study was to study differences in treatment expectations after participating in qigong and exercise therapy among participants with long-term neck pain, the impact of total group expectations on treatment outcomes, and the relationship between these treatment expectations and pain and disability.

Method: Reliable questionnaires were used. Differences between qigong and exercise was studied in a randomized, controlled, multicenter trial (n = 122). The impact of total group expectations on treatment outcomes and the association between these treatment expectations and pain and disability were studied with nonparametric statistical analysis and Spearman's correlation coefficient.

Results: The exercise group had higher expectations than the qigong group before the intervention on how logical treatment seemed to be and after the intervention on treatment credibility (ie, that the treatment would reduce/eliminate neck pain). The exercise group was also more confident that the treatment could reduce neck pain and significantly increased their expectations of reduced neck pain over the 3-month intervention period. Both treatment groups had high expectations of the assigned treatment. Those with high expectations had better treatment outcomes in pain and disability. The relationship between treatment expectations and credibility, pain, and disability was weak.

Conclusions: The current findings support the role of assessment of expectation/credibility for positive treatment results. An understanding of each patient's treatment expectations may be helpful in guiding patients with respect to appropriate interventions and as an indication of risk of poor outcome. (*J Manipulative Physiol Ther* 2017;40:676-684)

Key Indexing Terms: *Exercise Therapy; Neck Pain; Physical Therapy Modalities; Qigong; Treatment Outcome*

INTRODUCTION

Interest in participants' expectations of treatment and the impact of these expectations on treatment outcome has increased in the past decade. Participants' expectations of their therapeutic gain and the mechanisms by which this can affect health outcomes have been studied in several medical areas and in patients with different clinical conditions.¹⁻⁵ Expectation is

defined as a strong belief that something will happen, that someone will or should achieve something. It is described as "a hope/think about certain developments" or "that a particular treatment proves effective," and it has been given a variety of names: belief, faith, hope, confidence, meaning, and credibility. There is also a close link between expectation and the dimensions of satisfaction. Satisfaction is always relative to the patient's expectation and changes when expectations change, even though the object of comparison may remain constant.^{6,7}

Participants with neck pain (NP) are frequently treated with physiotherapy.⁸⁻¹⁰ Neck pain is a common human phenomenon, and most people can expect to experience NP during their lifetime.¹¹ It is described as an episodic occurrence over a lifetime, with variable recovery. Depending on the definition used, 30% to 50% of adults will experience NP in any given year and 5% to 10% will have disabling NP problems.¹¹⁻¹⁴ Factors that have been reported to have a bearing on the remaining disability are age, sex, high pain intensity, low-rated general health, longstanding problems, and low expectations of treatment.^{15,16} There is a great deal of variation in choices of

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interventions, and there remains a certain degree of uncertainty about the optimal treatment strategy.^{17,18} Evidence suggests that manual therapy (mobilization and manipulation) and a supervised exercise intervention are more effective than no treatment or alternative interventions such as tai chi and qigong.^{18,19} However, none of the active treatments is clearly superior to any other in the short or long term.¹⁸⁻²⁰

Many variables have been studied in participants with NP to identify factors that are associated with chronic NP, and psychosocial factors are known to be important predictors of outcome. Patients' individual concerns, particularly their beliefs and expectations, may be important factors in the choice of treatment and may provide opportunities for identifying persons who are at risk of developing chronic complaints. Little research has been done to explore pain patients' expectations of physiotherapy. Kjellman et al²¹ reported that patients with high pain intensity before treatment had, to a greater extent, low expectations and underestimated their performance status. Some studies^{8,21,22} found that high expectations of specific therapies are associated with greater functional improvement after treatment and that expectations relating to recovery may predict outcome.²³ However, only a few studies have focused on patients with NP.^{18,24,25}

The first aim of this study was to study differences in treatment expectations between groups before and after participation in qigong and exercise therapy, respectively, among participants with long-term, nonspecific NP. The second aim was to study the impact of the total groups' expectations on treatment outcomes and the relationship between these treatment expectations and pain and disability. The hypothesis was that the expectations of exercise therapy would be higher than the expectations of qigong.

METHODS

The first aim of this study was answered by a randomized, controlled, multicenter trial analyzing differences in treatment expectations between participants with nonspecific, long-term NP in qigong and those in exercise therapy. The second aim was fulfilled by analyses of the impact of total group expectations on treatment outcomes and the association between these treatment expectations and pain and disability. This was a cooperative study between the University of Gothenburg and Lund University. The regional ethics board of Gothenburg approved the study (No. 516-89). Treatments were explained to each participant verbally and in writing before randomization. The trial was registered as a clinical trial from Lund University. The ClinicalTrials.gov identification number is NCT02724826.

Study Participants

Participants were recruited via an advertisement in local newspapers in 3 major cities in Sweden. Inclusion criteria

were male or female sex, age between 18 and 65, nonspecific neck pain lasting >3 months, and a mean pain intensity of at least 20 mm on a visual analog scale (VAS). Exclusion criteria were traumatic neck injuries, neurologic symptoms, chronic tension-type headache, migraine, rheumatic diseases, fibromyalgia and other severe physical and mental diseases, and treatment with antidepressive and anti-inflammatory drugs.

The efficacy of the 2 interventions, physical exercise and qigong, was estimated as the proportion of patients with improved scores and the 95% confidence interval. A sample size of 120 participants was required with a power of 80%, a significance level of .05, and pain intensity as the primary outcome measure.

To fulfill the first aim, 122 participants with long-term, nonspecific NP were randomly assigned to the interventions of qigong (n = 60) and exercise therapy (n = 62). There were 86 women (70%) and 36 men (30%), with a mean age of 44 years. Forty-six (38%) had a history of NP lasting between 1 and 5 years, and 55 (45%) had a history longer than 5 years. Most of the participants were working in different occupations; only 9 (7%) were on sick leave. Sixty-three percent (n = 77) of the participants had undergone physiotherapy earlier. Of the total group, 118 completed the questionnaire on expectations and credibility of treatment (Fig 1). Baseline characteristics of the total study sample were equally balanced between the 2 groups. The average neck pain intensity and disability level in the 2 groups at baseline and after intervention are outlined in Table 1.

Measurements and Procedure

Treatment expectations and treatment credibility were measured with the questionnaire developed by Borkovec and Nau.²⁶ The questionnaire consists of 5 questions answered on a 10-point scale for expectation/credibility for improvement and has been found to be reliable and valid. It was translated into Swedish, and the 10-point scale was then changed to a VAS (measured in millimeters with the endpoints 0 = no expectancy and 100 = highest conceivable expectancy of treatment outcome).²⁷

All participants completed questionnaires eliciting demographic data, pain (duration and intensity), neck disability (Neck Disability Index [NDI]), and expectations of treatment and treatment credibility at baseline and after 3 months of treatment. Pain intensity was rated as current NP and average NP during the week before the assessment, measured with a VAS (in millimeters with the end points 0 = no pain and 100 = unbearable pain).²⁸ Neck disability was assessed with the NDI,²⁹ a 10-item scaled questionnaire for which the total scores were recalculated into percentages (0%, no disability; 100%, maximum disability). The items assessed NP with respect to intensity, personal care, lifting, reading, headache, concentration, work, driving, sleeping, and recreation.

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