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Original Article

Psychological interventions influence patients' attitudes and beliefs about their chronic pain



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ABSTRACT

Background: Patients' changing attitudes and beliefs about pain are considered as improvements in the treatment of chronic pain. Multidisciplinary approaches to pain allow modifications of coping strategies of patients, from passive to active.

Methods: We investigate how two therapeutic treatments impact patients' attitudes and beliefs regarding pain, as measured with the Survey of Pain Attitudes (SOPA). We allocated 415 patients with chronic pain either to psychoeducation combined with physiotherapy, self-hypnosis combined with self-care learning, or to control groups. Pain intensity, global impression of change, and beliefs and attitudes regarding pain were assessed before and after treatment.

Results: Our main results showed a significant effect of psychoeducation/physiotherapy on control, harm, and medical cure SOPA subscales; and a significant effect of self-hypnosis/self-care on control, disability and medical cure subscales. Correlation results showed that pain perception was negatively associated with control, while positively associated with disability, and a belief that hurt signifies harm. Patients' impression of improvement was associated with greater control, lower disability, and lower belief that hurt signifies harm.

Conclusions: The present study showed that self-hypnosis/self-care and psychoeducation/physiotherapy were associated with patients' evolution of coping strategies from passive to active, allowing them to reduce pain perception and improve their global impression of treatment effectiveness.

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1. Introduction

In recent years, it has become increasingly clear that psychological factors play an important role in the experience of chronic pain¹ and studies have shown the effective benefits of non-pharmacological approaches, as well as a real need for

assessments of combinations of pain treatments.^{2–4} Multidisciplinary approaches usually encompass programs that adhere to the biopsychosocial conceptualization of chronic pain and include more than just physical treatment.⁵ In a recent meta-analysis, the authors show that physical rehabilitation combined with psychological interventions (i.e., biopsychosocial approaches) were more effective than the usual treatments (i.e., care provided by a general practitioner or medical specialist) to decrease pain and disability in chronic pain patients.⁵

In addition, when pain becomes persistent, patients may modify their previously held cultural or personal beliefs and attitudes about pain to form views that are more consistent with their persistent pain experience. A number of studies have argued for the importance of considering patients' attitudes and

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beliefs about pain treatments, since it can influence the treatment outcome. 6 Multidisciplinary approaches to pain usually focus cognitive interventions on unhelpful pain cognitions and beliefs, such as fear-avoidance beliefs, catastrophic thought processes, and the belief that pain necessarily results from tissue damage. Studies have shown that these program approaches have resulted in increased functional performance, produced positive changes in pain experience (i.e., measures of sensation and "unpleasantness" pain ratings), increased cognitive coping and appraisal (positive coping measures), and reduced behavioral expressions of pain.8 Several scales exist to assess the attitudes and beliefs of patients regarding pain. The Survey of Pain Attitudes (SOPA) is one of these validated scales developed to identify pain-related beliefs, and was shown to be useful in chronic pain management, 9,10 Previous results have highlighted that the belief that one is disabled by pain was associated with both psychological and physical dysfunction, that a greater belief that hurt signifies physical injury was associated with greater physical dysfunction, and the belief that emotions affect pain was associated with psychosocial dysfunction.¹¹

The main objectives of this study were longitudinal and descriptive with an observational methodology. We here investigate how two therapeutic treatments routinely delivered in the Algology and Palliative Care Department of the University Hospital of Liège (Belgium) impact patients' attitudes and beliefs regarding pain, as measured with the SOPA. The overarching motivation for this work is that understanding how patients cope with their chronic pain, and how treatments impact their coping, will help to improve treatment outcomes and the design of care delivery for chronic pain patients.

2. Materials and methods

2.1. Population

Two therapeutic interventions (self-hypnosis combined with self-care learning, and physiotherapy combined with psychoeducation) were proposed to chronic pain patients in our Algology and Palliative Care Department. Patients were included from January 2007 to December 2012. Only patients on stable pharmacological medication during the last four months before screening were allowed to participate in this study.

The multidisciplinary team allocated 415 patients with chronic pain (348 females [mean age 54 \pm 11 years; mean duration of pain 124 \pm 123 months], 67 males [53 \pm 11 years; 107 \pm 115 months]) to the treatment program. Of these 415 patients, 89 were assigned to the control group, 169 to physiotherapy/psycho-education group, and 157 to self-hypnosis/self-care group [different chronic pain etiologies were equally represented across groups ¹²]. Table 1 presents characteristics of patients for each treatment group. The mean duration between pre- and post-intervention health assessment was 9 \pm 4months.

2.2. Design

The method used was the same as previously published by Vanhaudenhuyse et al. ⁴ Briefly, the design included four phases: (1) an initial screening phase during which the algologist elaborated an appropriate pain diagnosis, checked if pain treatment was stable and proposed the patient as suitable for a multidisciplinary approach. (2) a baseline pre-treatment assessment of patients' health using questionnaires conducted by a nurse, (3) a treatment delivery phase, and (4) a post-treatment assessment of patients' health using the same questionnaires conducted by a nurse (Fig. 1). Between phases 2 and 3, patients have to meet all experts of the pain team encompassing the algologist, nurses, physiotherapist and psychologist. Once patients have met each expert, pain diagnosis was elaborated based on discussion during weekly multidisciplinary meetings. The multidisciplinary team allocated patients to a treatment group based on patients' physical and psychological conditions, patients' individual pain history, patients' daily functioning as well as previous treatments tested by patients. Patients were thus included in a treatment group when the clinical team had recorded a pain problem for which the patient had tested several treatments that had not significantly resolved this pain problem. Based on our clinical experience and existing guidelines, pain diagnosis includes the research of chronic pain etiology, specific pain symptoms and signs, as well as medical and psychiatric comorbidities. Patients were informed about all the possibilities. Preferences about the type of treatment approach were also discussed with the patients during the psychological evaluation by our pain psychologist. Patients' agreement with approaches proposed by the team and patients' agreement to actively participate were mandatory. Treatment was proposed according to our clinical experience, supported by previous results showing the benefit of physiotherapy, self-hypnosis and psycho-education in chronic pain management.⁴ In this study, we compared the two treatment plans, i.e., physiotherapy combined with psycho-education and selfhypnosis/self-care learning, with a control group.

- (1) Control group. This included patients who were not able to participate in an intervention group for various reasons, such as a long distance between home and the centre, difficulty travelling, lack of interest in regard to the treatments proposed. Patients included in this group were invited to complete pre- and post-assessment health questionnaires after a waiting period of 9 months.
- (2) Psycho-education combined with physiotherapy. The physiotherapy program was conducted by a rehabilitation specialist, physiotherapists and an occupational therapist and combined 'back school' with physical training programs. A complete description of the physiotherapy program can be read in.¹³ The 'back school' consisted of theoretical information on spinal functional anatomy and pathophysiology, identification of risks associated with daily activities and

Table 1Mean and standard deviation (SD) for age and pain duration of patients according to gender and therapeutic group. y, year; m, months.

Therapeutic group	Number of patients (N)	Gender	Mean age (SD)	Mean duration of pain (SD)
Control	89	23 Male	53y (13)	122 m (150)
		66 Female	56y (13)	121 m (133)
Psycho-education and physiotherapy	169	19 Male	55y (9)	72 m (84)
		150 Female	54y (10)	114 m (113)
Self-hypnosis/self-care learning	157	25 Male	50y (10)	125 m (89)
		132 Female	54y (11)	141 m (130)
Total	415	67 Male	53y (11)	107 m (115)
		348 Female	54y (11)	124 m (123)

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