Clinical pain research

A multi-facet pain survey of psychosocial complaints among patients with long-standing non-malignant pain

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**HIGHLIGHTS**

- A measure of psychosocial pain related distress is developed from patient reports.
- Stress-related exhaustion is an important factor in long-standing pain.
- Pain patients often have a negative outlook on the future.

**ARTICLE INFO**

Article history:
Received 7 September 2016
Received in revised form 28 June 2017
Accepted 5 July 2017

Keywords:
Chronic pain
Assessment
Interviews
Patient experiences
Qualitative method

**ABSTRACT**

**Background and aims:** Psychometric inventories and scales intended to measure cognitive, emotional and behavioural concomitants of pain are typically constructed by deducting items from theoretically derived concepts related to pain states, e.g. social support, perceived control, depressiveness, and catastrophizing. The aim of this study was to design a clinically useful, generic pain distress inventory – The Multi-Facet Pain Survey (MFPS) – inductively derived from psychological and social complaints reported by a study group of individuals with severe chronic nonmalignant pain.

**Methods:** Extensive clinical interviews with hospitalized chronic pain patients were made by clinical psychologists. The purpose was to highlight the patients’ pain histories and their beliefs and feelings about the pain, and to determine factors possibly influencing their rehabilitation potential. The type of distress reported were sorted into categories with a procedure similar to content analysis. Distress reports were converted to statements, forming items in a questionnaire, the Multi-Facet Pain Survey.

**Results:** Our analyses supported a distress structure including 15 categories, or “facets”, comprising in all 190 types of psychosocial distress. Ten of the facets denote beliefs about the present condition and aspects of distress experienced in daily life (e.g. cognitive problems); three facets reflect the illness history, and two the patient’s views on future prospects. To improve the clinical utility, we shortened the scale into a 53 items inventory. A factor analysis of these 53 items revealed four clinically meaningful factors: (1) stress-related exhaustion; (2) impact of pain on daily life; (3) self-infficacy in regard to future prospects; and (4) negative experiences of health care. While the second factor represents distress directly related to the pain, the first factor reflects long-term exhaustion effects of the pain condition similar to those seen in individuals exposed to long periods of stress. Items loading in the third factor reflect a pessimistic outlook on the future. The content validity of the scale was explored by predicting and testing correlations between the 15 MFPS facets, and the Symptom Checklist (SCL-90) and the West Haven Yale Multidimensional Pain Inventory (MPI). Some of the MFPS facets showed little or no agreement with any of the subscales of the comparison measures. The homogeneity was satisfactory both for facets and factors.

**Conclusions:** The Multi-Facet Pain Survey (MFPS) facets cover a broad array of experienced psychosocial distress in patients with severe, long-standing pain. Some facets of psychosocial impact of longstanding pain states shown in the qualitatively derived distress facets, or by the latent factors found in the factor analysis, may complement our understanding of the long-term impact of pain. Consequently, MFPS may improve the assessment of psychological and social complaints and complications in patients with chronic pain.

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http://dx.doi.org/10.1016/j.jpain.2017.07.013
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**1. Introduction**

The differentiation between acute and longstanding pain has received increasing interest during the last decades [1,2]. In an early phenomenological model, Dworkin et al. [3] described how an acute nociception episode, surviving expected duration, successively receives psychological and social overlays influencing the life situation for affected individuals. Over time the suffering tends to become less directly related to the pain perception, while the cognitive and emotional aspects gain in importance: for instance, catastrophizing ideations related to the pain and its consequences may influence the psychosocial wellbeing. The pain and its concomitants may eventually profoundly alter the behaviour and the social life of the chronic pain patient. It is today generally believed that chronization of pain is a process leading to several complications with vast implication in the afflicted individual’s life, and for rehabilitation prospects [4–6].

A large number of psychometric methods have been proposed to assess psychological and social aspects of chronic pain [7]. The first was the McGill Pain Questionnaire (MPQ) in which the type of pain could be described by choosing among descriptors of its sensory, affective, and evaluative qualities, each with several intensity levels [8]. Recent pain tests and questionnaires typically cover a broad range of psychological and psychosocial problems, relying upon theories of non-medical aspects of the chronic pain state. Affective distress, interference with daily activities, social support, and catastrophizing are examples of concepts believed to be relevant to the chronic experience, and items are formulated to assess each of them. One example of a broad-range, widely used method of this type is the West Haven – Yale Multidimensional Pain Inventory (MPI) [9].

Psychometric inventories and scales intended to measure cognitive, emotional and behavioural concomitants of pain are typically constructed by deducting items from theoretically derived concepts related to pain states, e.g. social support, perceived control, depressiveness, and catastrophizing. In the last decades, however, there have been an increasing number of studies using qualitative research methods to better understand the subjective aspects of pain [10–13]. These studies are based upon thorough interviews with individual pain patients. An interesting indication of such methodological reorientation appeared a few years ago when the US Food and Drug Administration [14] launched detailed recommendations on how to construct instruments for patient-related outcome measures. A more careful exploration of patients’ reports and even observing the genuine words used by patients to characterize their own situation was emphasized to ensure the clinical validity of outcome studies.

In compliance with these recommendations, Stokes et al. reported on the development of a questionnaire for use in the evaluation of clinical trials with chronic back pain patients [15]. They used a combination of qualitative methods to explore the structure of the patients’ complaints, resulting in a 26-item scale reflecting problems due to low back pain. Another example of the use of qualitative methods in the construction of pain scales is the Back Pain Attitudes Questionnaire (Back-FAQ), developed by Darlow et al. [16].

Previous attempts to design pain questionnaires inductively derived from explorations of pain patient reports have concerned specific diagnoses, and restricted types of pain complaints. To our knowledge, there is still a lack of a generic pain inventory, mirroring psychosocial and social problems spontaneously reported by patients suffering from chronic pain, and with items directly reflecting the full range of their reported complaints.

The overall aim of this study was to develop a multidimensional patient-centred inventory of psychosocial complaints among patients with severe, longstanding pain states, based upon inductive analyses of patient reports, rather than upon deductions from theoretical concepts. To accomplish this goal, we first explore distress and complaints reported by patients with longstanding non-malignant pain states, pertaining to their experiences of the pain sensation, different psychological, functional and social consequences and complications associated with the pain condition, as perceived by and communicated by the patient. Next, we evaluate the psychometric properties of a Multi-Facet Pain Survey, based upon the information delivered by chronic pain patients in in-depth interviews.

**1.1. Ethics**

The research was approved by the Research Ethical Committee at the University of Gothenburg (reg. no. 396-94 800/94 and 337–14).

**1.2. Study population and samples**

The participants in this study comprise a heterogenic group of patients with non-malignant, longstanding pain problems, mostly of a musculoskeletal origin. For patients taking part in this study, pain complaints were of more than 12 months’ duration. Their age ranged from the mid-twenties to the early sixties, and about two thirds were women. They had all experienced various kinds of rehabilitation programmes organized by the Social Security System in Sweden, without lasting success. They were referred to the study site, a hospital with multi-professional pain expertise, because of rehabilitation failures. The aim of the referrals was to propose possible further actions.

Several patient samples were used for the various parts of this study. They are specified as they appear.

**1.3. Statistical methods**

For the qualitative analysis of interview data, we used an iterative sorting procedure inspired by the method of content analysis [17,18]. For all quantitative analyses (means, standard deviations, Cronbach’s alpha, product moment correlations, and explorative factor analysis with Varimax rotation) we used the IBM SPSS Statistics, Version 23.

**2. Part I: Patient interviews and qualitative analysis**

**2.1. Material and methods**

Two methods were used to furnish relevant data: one was the written reports based on thorough clinical interviews by a psychologist working at the hospital. The other was transcripts of
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