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The relationship between psychosocial distress and disability assessed by the Symptom Checklist-90-Revised and Roland Morris Disability Questionnaire in patients with chronic low back pain

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Abstract

BACKGROUND CONTEXT: In the assessment and treatment of chronic low back pain (CLBP) patients, the biopsychosocial model is used worldwide. Psychological distress has been reported to have a strong relationship with disability as measured with several instruments. The relationship between psychosocial distress measured with the Symptom Checklist-90-Revised (SCL-90-R) and self-reported disability measured with the Roland Morris Disability Questionnaire (RMDQ) has not been investigated.

PURPOSE: To analyze the relationship between psychosocial distress measured with the SCL-90-R and self-reported disability measured with the RMDQ in patients with CLBP.

STUDY DESIGN/SETTING: This cross sectional study was performed in an outpatient pain rehabilitation setting.

PATIENT SAMPLE: The study sample consisted of 152 patients with CLBP.

OUTCOME MEASURES: SCL-90-R and RMDQ.

METHODS: All patients admitted for multidisciplinary treatment completed the SCL-90-R and RMDQ before treatment. Pearson's correlation coefficients between SCL-90-R (Global Severity Index and subscales) and RMDQ were calculated.

RESULTS: Correlation coefficients between SCL-90-R (Global Severity Index and subscales) and RMDQ ranged from 0.18 to 0.31 ($p<.05$).

CONCLUSION: The relationship between psychosocial distress measured with the SCL-90-R and self-reported disability measured with the RMDQ in CLBP patients is weak.

Keywords: Chronic low back pain; Disability; Psychosocial distress; Roland Morris Disability Questionnaire; Symptom Checklist-90-Revised

Introduction

Disability resulting from nonspecific chronic low back pain (CLBP) continues to be a large problem in western societies. The biopsychosocial model is applied worldwide to assess and treat patients with CLBP [1,2]. According to this model, patient's functioning is influenced by biological, psychological, and social factors. Psychosocial factors such as depression, anxiety, distress, and related emotions

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generally have more impact than biomedical or biomechanical factors on back pain disability [3–6]. Distress is described as excessive or abnormal stress responses [2]. Clinical presentations of distress are anxiety, increased body awareness, fear and uncertainty, depressive symptoms, anger, and hostility. Psychosocial distress has been reported to occur in 15% to 41% of CLBP patients [7]. Many instruments are available for assessing distress. Examples of these questionnaires are the Modified Somatic Perception Questionnaire (MSPQ), the Modified Zung Depression Inventory (ZDS), the Beck Depression Inventory (BDI), the Distress Risk Assessment Method (DRAM), and the Symptom Checklist-90-Revised (SCL-90-R). They all measure the construct distress in somewhat different ways, and measure, therefore, different aspects of distress. Consequently, they may not be used interchangeably. Previous research found a relationship between psychosocial distress, measured with different questionnaires and disability. Scores on the disability index increase significantly with distress, as measured with the DRAM [8]. Evidence as to whether psychosocial distress is a cause or a consequence of CLBP remains inconclusive. Regardless, whether a contributory cause or a resultant effect, distress is a major issue surrounding back pain management and requires both identification and management [7,9].

The SCL-90-R is widely used to assess psychosocial distress, also in patients with CLBP [10–14]. To assess functional status in patients with CLBP the Roland Morris Disability Questionnaire (RMDQ) is a valid and frequently used questionnaire [15–17]. Despite the widespread use of both the SCL-90-R and the RMDQ in the assessment of patients with CLBP, the strength of the relationship between psychosocial distress and disability has not been studied with these instruments. The aim of this study was to investigate the strength of the relationship between psychosocial distress and disability as assessed with the SCL-90-R and the RMDQ in patients with CLBP. If the strength of this relationship is at least moderate ($r=0.50$ or more), then these instruments may be helpful in the assessment of patients with CLBP. Consequently, if the strength is weak ($r\leq 0.49$) or nonsignificant ($p<.05$), the combined use of these instruments in the assessment of patients with CLBP may be questioned.

Materials and methods

Patients

All consecutive patients with CLBP admitted between 2002 and 2004 to the outpatient multidisciplinary pain program of the Centre for Rehabilitation of the University Medical Centre Groningen, The Netherlands, were included for the study. Patients were referred by general physicians or medical specialists. Inclusion criteria were nonspecific low back pain lasting longer than 6 weeks, older than 18 years, and patient's agreement to participate in the multidisciplinary outpatient pain rehabilitation program. Exclusion criteria were comorbidity with negative consequences for physical and/or mental functioning, insufficient knowledge of the Dutch language, and ongoing treatment elsewhere for CLBP.

General procedures

All patients filled in a questionnaire that covered demographic information, visual analog scale score for pain, as well as the Dutch language version of the SCL-90-R and the RMDQ before the start of the program as part of the regular diagnostic evaluation. All patients signed informed consent for using their data for the research purposes.

Measurements

Pain intensity was measured with a 100-mm visual analog scale. The endpoints of the scale were anchored at zero with the words ''no pain'' and at 100 mm with ''unbearable pain.''

The SCL-90-R is a self-report inventory to assess psychosocial distress [18,19]. Patients were instructed to indicate the amount they were bothered by each of the distress symptoms during the preceding week. Patients rated 90 distress symptoms on a 5-point Likert scale with 0 being ''not at all'' and 4 being ''extremely.'' Total scores can range from 0 to 360. The statements are assigned to 8 dimensions reflecting various types of psychopathology: anxiety, agoraphobia, depression, somatization, insufficiency, sensitivity, hostility, and insomnia. The Global Severity Index (GSI) reflects the severity of all answered statements as a global measure of distress. The dimensions of the SCL-90-R somatization, anxiety, and hostility have the same construct and name in English and Dutch language version. With respect to the construct, the dimension insufficiency (Dutch version) is similar to the dimension obsessive compulsive (English version), agoraphobia (Dutch version) is similar to phobic anxiety (English version), and the sum score of emotional instability (Dutch version) is similar to the GSI (English version). The dimensions sensitivity, insomnia, and additional items are not comparable; however, they contribute to the GSI [20]. Next to the use of the 8 separate dimensions of the SCL-90-R, the clinical use of cutoff scores for the GSI is suggested. A cutoff score of the GSI at 224 is proposed [21]. Patients with a score equal to or higher than 224 are under suspicion for psychopathology. Others proposed a cutoff score at 174, where a score equal to or higher than 174 should be interpreted as above mean or (very) high [22].

The RMDQ is a health status measure to assess self-reported disability because of low back pain. The RMDQ consists of 24 items. Each item is qualified with the phrase ''because of my back pain.'' Patients were asked to check if it applied to them that day. The items focus on a limited