

## Predictors of psychological distress and well-being in women with chronic musculoskeletal pain: Two sides of the same coin?

Alexa Huber<sup>a</sup>, Anna Lisa Suman<sup>a</sup>, Giovanni Biasi<sup>b</sup>, Giancarlo Carli<sup>a,\*</sup>

<sup>a</sup>Department of Physiology, Siena University, Siena, Italy

<sup>b</sup>Department of Clinical Medicine and Immunological Sciences, Siena University, Siena, Italy

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### Abstract

**Objective:** To date, few results on well-being in chronic-pain patients have been published, while several studies in patients without pain have indicated that well-being may not be equivalent to absence of psychological distress. The aim of the present study was to investigate the relationship between psychological distress and well-being and to identify the predictors of each in patients with chronic nonmalignant pain. **Methods:** Sixty-nine women with chronic multiregional musculoskeletal pain, 41 of whom met American College of Rheumatology criteria for fibromyalgia, completed questionnaires on pain, fatigue, stiffness, physical disability (Fibromyalgia Impact Questionnaire), psychological distress [Multidimensional Affect and Pain Survey (MAPS), Symptom Check List-90 (SCL-90), State-Trait Anxiety Inventory Form Y2 (STAI-Y2)], and hedonic and eudaimonic well-being (MAPS). **Results:** Patients reported increased amounts of psychological distress (STAI-Y2

and SCL-90) compared to healthy people. Multiple regression analysis of patient data demonstrated that higher psychological distress was related to higher age, more intense pain, a higher positive tender point count, and more physical disability. Well-being (both hedonic and eudaimonic aspects) decreased with higher disability, but was independent of age, pain intensity, and number of positive tender points. Bivariate correlations showed that psychological distress was moderately related to eudaimonic well-being and strongly related to positive affect, an aspect of hedonic well-being. **Conclusion:** In patients with chronic musculoskeletal pain, self-reports of well-being and low psychological distress only partially overlap with each other and are differently related to major patient symptoms, supporting the relevance of the concept of well-being to chronic-pain research and a need for further studies in this field.

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### Introduction

In recent decades, health-related research and health care have focused on negative mental processes such as psychological distress and dysfunction, while positive mental processes such as psychological well-being have been much less studied [1]. According to some authors [2,3], this underscores a mistaken assumption that health can be equated with absence of illness and that well-being is equal

to lack of distress. Yet, several clinical and experimental studies have shown that psychological distress and well-being are better construed as distinct, partly independent dimensions [3–6].

Psychological research distinguishes two broad conceptualizations of well-being [1]: *hedonic* versus *eudaimonic* well-being. The hedonic tradition defines well-being as people's affective and cognitive evaluations of their lives [7], thus embracing positive affect as a defining feature of well-being. The eudaimonic tradition is exemplified in Ryff's [8] work on "psychological well-being." Ryff defines well-being in terms of psychological functioning and personal growth, and has distinguished six dimensions: autonomy, environmental mastery, personal growth, positive relations with

\* Corresponding author. Sezione di Neuroscienze e Fisiologia Applicata, Dipartimento di Fisiologia, Università degli Studi di Siena, Via Aldo Moro, 53100 Siena, Italy. Tel.: +39 0577 2340 39; fax: +39 0577 2340 37.  
E-mail address: carlig@unisi.it (G. Carli).

others, purpose in life, and self-acceptance. The main difference between the two traditions is that the hedonic approach focuses on happiness, while the eudaimonic approach defines well-being in terms of the degree to which a person is fully functioning, which may or may not be accompanied by feeling good.

To date, few studies on well-being in patients suffering from chronic pain have been published [9,10]. Results have shown no significant relationships between eudaimonic well-being and pain severity in chronic-pain patients, while several studies have suggested that positive emotions and cognitions may mitigate the effect of negative emotions in pain patients [11,12].

The aims of the present study were (a) to investigate the relationship between psychological distress and well-being and (b) to identify the predictors of each in women with fibromyalgia and similar forms of chronic musculoskeletal pain. Fibromyalgia is a syndrome characterized by chronic diffuse musculoskeletal pain and hyperalgesia [13], usually in the absence of any physical pathology that could account for the pain, although it is often associated with a number of painful and nonpainful diseases [14]. The predictor variables included in our study were chosen among the main symptoms of fibromyalgia: pain intensity, pain extent (pain area), hyperalgesia, fatigue, stiffness, and physical disability.

## Methods

### Subjects

The patient sample consisted of 69 women who were recruited from the University of Siena Rheumatology Unit on the basis of chronic (i.e., >3 months' duration) diffuse musculoskeletal pain (inclusion criteria). They included both outpatients and inpatients who had been subjected to systematic evaluation for rheumatological, immunological, allergic, metabolic, hematological, and neoplastic diseases and were referred to our unit mainly to confirm or exclude a suspected diagnosis of fibromyalgia.

Forty-one patients (59%) met American College of Rheumatology criteria for fibromyalgia [15] (i.e., suffering from widespread musculoskeletal pain associated with at least 11 positive tender points). Thirteen patients had widespread pain but <11 positive tender points. Fifteen patients suffered from multiregional pain but did not meet the fibromyalgia criterion of widespread pain; six of these patients had >10 positive tender points. All these patients were included in the sample, following the suggestions of numerous studies, which indicate that similar mechanisms, but of different magnitudes, operate in both fibromyalgia and other forms of chronic musculoskeletal pain [16–18]. In addition to their chronic musculoskeletal pain, several patients suffered from one or more other chronic pain conditions, as shown in Table 1. Some patients showed a comorbidity with the following diseases: thyroid dysfunction

( $n=6$ ), hypertension ( $n=5$ ), allergies ( $n=2$ ), psoriasis ( $n=2$ ), and diabetes ( $n=1$ ). Patient profiles are in line with the literature showing that chronic musculoskeletal pain [19]—and above all fibromyalgia—is frequently associated with one or more focal chronic pain conditions [e.g., back pain [20], irritable bowel syndrome (IBS), and headache [21]].

No patient suffered from dermatological problems or fever on the experimental session day or had been subjected to invasive techniques in the 3 days preceding the experimental session. No medications had been taken for 24 h preceding the evaluation. All procedures were performed in accordance with the requirements of the ethical committee of the University of Siena.

### Measures

Within the same session, each patient completed a general epidemiological–anamnesic questionnaire, six measures of physical symptoms (tender point count, pain area, pain intensity, fatigue, stiffness, and physical disability), and three measures of psychological distress (general psychological distress, pain-related psychological distress, and trait anxiety) and well-being (hedonic and eudaimonic aspects). Table 2 gives an overview of all the variables assessed in this study.

### Measures of physical symptoms

The following six measures of physical symptoms were administered: (a) the number of positive tender points (pain on pressure, 4 kg/1.54 cm<sup>2</sup>) in each patient was identified using a pressure algometer, following the procedure described in Carli et al. [18]. (b) The patients indicated the

Table 1  
Clinical symptoms (mean±S.D.), psychological test results (mean±S.D.), and comorbid chronic pain conditions ( $n$ ) for 69 patients

|   |             |
|---|-------------|
| Pain duration (months)  | 113.5±106.2 |
| Pain area (% body surface)  | 44.0±22.0   |
| Pain intensity (VAS 0–100)  | 66.2±25.9   |
| Fatigue (VAS 0–100)   | 55.6±34.2   |
| Stiffness (VAS 0–100)   | 57.4±32.8   |
| Tender point count (0–18)   | 12.90±4.46  |
| Physical disability (0–3)   | 0.8±0.7     |
| STAI-Y2 (trait)   | 47.0±10.0   |
| SCL-90 GSI (0–4)  | 1.0±0.5     |
| MAPS SP (0–5)   | 2.2±0.9     |
| MAPS EP (0–5)   | 2.1±0.9     |
| MAPS WB-5 (0–5)   | 2.8±1.0     |
| Pain comorbidities  |             |
| Inflammatory immune diseases (e.g., rheumatoid arthritis, lupus, Sjögren) | 9           |
| Spinal diseases (e.g., disc hernia)                                       | 14          |
| Gastrointestinal diseases (e.g., IBS)                                     | 12          |
| Carpal tunnel syndrome  | 2           |
| Raynaud syndrome  | 3           |
| Headache  | 2           |

STAI-Y2 measures trait anxiety; SCL-90 GSI measures general psychological distress; WB-5, Well-Being scale.

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