



Complex regional pain syndrome, alexithymia, and psychological distress



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ABSTRACT

Objective: This study aims to elucidate the relationships between alexithymia, psychological distress, and pain in persons with complex regional pain syndrome (CRPS).

Methods: Participants were 60 Israeli adults ages 19–65. This is a cross sectional study with a comparison group. Alexithymia, psychological distress, and pain were assessed in 30 individuals with CRPS in comparison to 30 gender- and age-matched persons with lower back pain (LBP). Assessments included the Toronto Alexithymia Scale, Hospital Anxiety and Depression Scale, and two subscales of the McGill Pain Questionnaire.

Results: Persons with CRPS had significantly higher ratings of psychological distress and of alexithymia when compared to LBP controls. Pain severity was significantly associated with higher levels of alexithymia and psychological distress among persons with CRPS, but not among controls. Alexithymia and pain severity correlations were significantly different between the two groups. In persons with CRPS, the relationships between alexithymia and pain severity and between difficulty identifying feelings and pain were not confounded by psychological distress.

Conclusions: To our knowledge, this is the first cross sectional study providing empirical evidence on the relationship between alexithymia and CRPS. From the perspective of conceptualizing alexithymia as an outcome of CRPS, findings highlight the importance of early CRPS diagnosis and support the provision of care that addresses pain-related psychological distress and alexithymia among CRPS patients. Also, findings underscore the need to generate alternative, non-physical avenues, such as learning to identify feelings for processing pain, in order to reduce pain among persons with CRPS.

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Introduction

Complex regional pain syndrome (CRPS) is a chronic pain condition characterized by a continuing (spontaneous and/or evoked) regional pain that is seemingly disproportionate in length of time or degree of pain after trauma or other lesions. The pain usually has a distal predominance of abnormal sensory, motor, sudomotor, vasomotor edema, and/or trophic findings [1]. The evolution of CRPS varies, but it typically results in functional impairment in the affected limb, which adversely affects one's quality of life [2,3]. While the etiology of CRPS is still unclear, several underlying patho-physiological mechanisms have been identified. These include aberrant changes in vasomotor function, abnormalities in regulating inflammatory responses on a local, regional and/or central level, and problems with regulation of neuroplasticity [4,5].

Psychological factors such as stressful life events and psychological states such as anxiety, depression, and anger may alter catecholamine activity. Thus, they may directly affect pain intensity and in this way impact patho-physiological mechanisms of CRPS and contribute to its perpetuation [6,7]. Therefore, pain in persons with CRPS may be affected by factors relating to emotional regulation. The findings on the relationships between psychological distress, emotional regulation, and pain in persons with CRPS are inconclusive. Understanding these relationships may elucidate effective coping styles and beneficial rehabilitation efforts for persons with CRPS [8].

One indicator of emotional regulation is alexithymia, a multidimensional psychological structure that includes difficulty identifying, verbalizing, or describing feelings and an externally-oriented thinking style [9]. High levels of alexithymia have been reported among persons with various types of pain, including lower back pain (LBP) [10], fibromyalgia [11], and myofascial pain [12,13]. Conversely, others have found no association between alexithymia and pain among chronic pain patients [e.g., [14]]. The relationship between alexithymia and CRPS has been scantily examined. In a psychiatric evaluation of 34 persons with CRPS it was found that 88% met the clinical criteria of alexithymia [15]. On the other hand, in a prospective study of patients

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with a fracture in the distal radius, no differences in alexithymia scores were found among patients who subsequently developed CRPS when compared to patients who did not develop CRPS [16].

The relationship between CRPS, anxiety, and depression is inconclusive [see review by 6]. With regards to depression, higher [17,18], comparable [19,20], and lower [21,22] levels of depression have been found in persons with CRPS when compared to other groups. In a similar manner, findings on anxiety and CRPS diverge, with reports of higher [18], comparable [19], and lower [23] anxiety levels in persons with CRPS in comparison to other groups.

Psychological distress may confound the association between pain and alexithymia in persons with CRPS. It has been suggested that alexithymia hinders a successful regulation of negative feelings, which in turn leads to increased negative affect or distress, chronic over-activation of the sympathetic system, and decreased capacity of the immune system. These psychological and physical outcomes may contribute to CRPS exacerbation and increased pain [24,25]. Accordingly, distress has been associated with pain, demonstrating a more potent association among persons with CRPS in comparison to persons with other chronic pain [17]. In addition, alexithymia has been associated with psychological distress [26], depression [27], anxiety, and higher internalized anger expression [13]. Studies of persons with non-CRPS chronic pain have shown that when controlling for distress factors, the association found between alexithymia and pain did not reach significance [28] or was significant for affective pain but not sensory pain [12].

The objective of the current study is to elucidate the relationships between alexithymia, psychological distress, and pain in persons with CRPS in order to promote accurate assessment of pain and effective rehabilitation initiatives for this population. Accordingly, we examined levels of alexithymia, psychological distress, and pain in persons with CRPS in comparison to gender- and age-matched persons with chronic LBP. A measurement of psychological distress, a multidimensional assessment of pain, and an empirical assessment of alexithymia were utilized.

Methods

Participants

Ninety-three Israeli adults aged 19–65 were approached, of whom 46.2% had a diagnosis of CRPS, and 53.7% reported chronic LBP. Inclusion criteria were: 1. aged 18 or older; 2. experiencing pain for duration of at least 3 months; and 3. Hebrew proficiency. Exclusion criteria were: 1. pain intensity lower than 3/10 on the Visual Analogue Scale; 2. suffering simultaneously from CRPS and LBP; 3. history of CRPS in persons with LBP; and 4. history of mental illness or brain injury. CRPS was diagnosed according to the clinical Budapest Criteria [1], by physicians specialized in physical medicine. Inclusion in the comparison group was based on a subjective self-report of chronic LBP that was diagnosed by pain specialist physicians as nonspecific low back pain or back pain potentially associated with radiculopathy or spinal stenosis. Sixty participants met inclusion criteria and participated in the study.

Participants had a mean age (SD) of 38.2 (13.30). Of participants with CRPS, most were males, married, born in Israel, with a high school education, and of poor to adequate socio-economic status. No significant differences were found in background variables, duration of disease, or duration of treatment between persons with CRPS and persons with LBP (Table 1). Pain was experienced as continuous by most of the persons with CRPS (83.3%) as well as by those with chronic LBP (73.3%). Of the medications in use, non-narcotic medications were most frequently used by both participants with CRPS (76.7%) and by controls (56.7%). Rates of use of narcotic medication, mood stabilizers, and nonsteroidal anti-inflammatory drugs (NSAIDs) were (%) 53.3, 40.0, and 3.3 for the former, and 30.0, 20.0, and 10 for the latter. No

Table 1
Participants' characteristics by group (N = 60).

	CRPS n = 30		LBP n = 30	
	M (SD)	n (%)	M (SD)	n (%)
Age	38.25 (14.29)		38.2 (12.46)	
Gender (female)		12 (40)		12 (40)
Marital status				
Single		9 (30)		14 (46.7)
Married		17 (56.7)		13 (43.3)
Divorced		4 (13.3)		3 (10)
Place of birth				
Israel		24 (80)		24 (80)
East Europe		3 (10)		4 (13.3)
West Europe		1 (3.3)		2 (6.7)
Asia/Africa		2 (6.7)		0 (0)
No. of children				
0		11 (36.7)		13 (43.3)
1–2		10 (33.3)		9 (30)
3 or more		9 (30)		8 (26.7)
Education				
Elementary		0 (0)		2 (6.7)
High-school		21 (70)		16 (53.3)
Higher education		9 (30)		12 (40)
Financial status				
Poor		11 (36.7)		5 (16.7)
Adequate		12 (40)		12 (40)
Good to excellent		7 (20)		13 (43.3)
Duration of disease	3.33 (3.27)		6.00 (6.64)	
Duration of treatment	2.43 (2.17)		1.90 (2.75)	

CRPS = complex regional pain syndrome; LBP = lower back pain.

significant differences in type of pain or medication use between the two groups were found.

Procedure

The study was approved by the institutional review boards of Reuth Rehabilitation Hospital, Tel Aviv Sourasky Medical Center and Ariel University. The CRPS patients were recruited at the Israeli CRPS center in Reuth Rehabilitation Hospital. Among 43 patients diagnosed with CRPS according to the clinical Budapest Criteria, 30 patients (69.7%) met inclusion criteria and agreed to participate in the study. Control participants that matched the CRPS sample in terms of age and gender were sought and recruited from the pain clinic at Tel Aviv Sourasky Medical Center. Fifty patients suffering from chronic LBP were approached. Of these 50 patients, 30 patients (60%) met inclusion criteria and agreed to participate. All the participants signed informed consent forms. The data was collected via structured self-report questionnaires that were completed in the presence of the investigator (LBH) providing clarifications as needed. The duration of medical condition was calculated as time elapsed since the pain-initiating event. The duration of treatment was calculated as time passed since the beginning of the first pain treatment after experiencing pain.

Measurements

Socio-demographics and medical background were recorded and included age, place of birth, marital status, education, and economic status.

Alexithymia was assessed by the Hebrew translated version [29] of the Toronto Alexithymia Scale-20 (TAS 20; [30]). The questionnaire evaluates three factors: difficulty identifying feelings (seven items; e.g., I am often confused about what emotion I am feeling), difficulty describing feelings (five items; e.g., I find it hard to describe how I feel about people), and externally-oriented thinking (eight items; e.g., I prefer talking to people about their daily activities rather than their feelings). Items are rated on a 5-point scale ranging from 1 (total disagreement) to 5 (total agreement). The total score on each subscale is the

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