

Which Affective Temperaments are Common in Complex Regional Pain Syndrome?

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ABSTRACT **Objective:** Affective temperament describes attitudes and behaviors which stand on structural, genetic and biological basis. Five principal affective temperaments are described: depressive, hyperthymic, cyclothymic, irritable, and anxious. Temperament Evaluation of Memphis, Pisa, Paris and San Diego Autoquestionnaire (TEMPS-A) is a scale to measure affective temperament. Complex regional pain syndromes (CRPS) are neuropathic pain disorders developing after a trauma. There is a high coincidence between CRPS and psychiatric symptoms and personality disorders. However it has been debated whether these symptoms are the result or the cause of this debilitating disease. In this study, we attempted to explore the most common affective temperament in CRPS patients. **Material and Methods:** Sixty CRPS patients (35 males, 25 females) diagnosed clinically and met The International Association of the Study of Pain (IASP) criteria were recruited to this study. Turkish version the TEMPS-A scale was used to determine the dominant affective temperament. **Results:** Depressive temperament was the most common dominant affective temperament. In this study we founded its frequency significantly higher in CRPS patients than normal Turkish population ($p=0.00001$). **Conclusion:** Assessment of temperament after an injury may be useful to develop a more suitable treatment strategy. Depressive temperament may affect the clinical course of the CRPS.

Key Words: Complex regional pain syndromes; temperament; depression

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Affective temperament describes attitudes and behaviors which stand on structural, genetic and biological basis.¹ Temperament is believed to be more heritable and stable throughout life and it is possible to see it as a feature of the personality.² Five principal affective temperaments are described: depressive, hyperthymic, cyclothymic, irritable, and anxious.³ These temperaments could either be characteristic for each individual, without developing any affective illness, or constitute a predisposition pattern for an affective episode.⁴ Temperament Evaluation of Memphis, Pisa, Paris and San Diego Autoquestionnaire (TEMPS-A) is a scale to measure affective temperament and validity and reliability study of Turkish version the TEMPS-A scale was performed by Vahip and collagues.^{3,5}

Complex regional pain syndromes (CRPS) are neuropathic pain disorders developing after a trauma affecting primarily the extremity or after a central lesion (e.g., spinal cord injury, stroke). Clinical features include pain,

allodynia, hyperalgesia, trophic changes, autonomic, and motor dysfunction.⁶ The underlying pathophysiology of CRPS is unknown. However exaggerated inflammatory process or sympathetic dysfunction are some of suggested mechanisms.⁷

There is controversy regarding the importance of psychological/psychiatric factors in the development of the CRPS. In studies, a high coincidence between CRPS and psychiatric symptoms, especially depression, and personality disorders was found. However it has been debated whether these symptoms are the result or the cause of this debilitating disease.⁸⁻¹⁰ Affective temperament is believed to be relatively stable across the individual's life span and also forms the basis of affective disorders like depression. In this study, we attempted to explore the most common affective temperament in CRPS patients.

MATERIAL AND METHODS

Sixty CRPS patients (35 males, 25 females) diagnosed clinically and met The International Association of the Study of Pain (IASP) criteria were recruited to this study. All the subjects had the capability to verbally communicate and had not the co-morbidity such as diabetic neuropathy which may significantly influence their experience. Those with a history of psychiatric diseases were also excluded. Patients gave informed consent and the medical ethics committee of Vakif Gureba Training and Research Hospital approved the study.

Turkish version the TEMPS-A scale was used to determine the dominant affective temperament. After giving informed consent, research volunteers were asked to complete the TEMPS-A. Turkish version the TEMPS-A scale is a self-report instrument consisting of five subscales. Its 100 constituent items inquire about the subject's whole life about traits along depressive, cyclothymic, hyperthymic, irritable, and anxious lines. Individuals gave their answers as "yes" or "no" when considering whole of their lives. Cut-off points to determine dominant temperament are 13 for depressive (19 items), 18 for cyclothymic (19 items), 20 for hy-

perthymic (20 items), 13 for irritable (18 items) and 18 for anxious (24 items) mood. It is possible that somebody have more than one dominant affective temperament.

In statistical analysis, mean and standard deviation (SD) were calculated for each assessed variable. Fisher Exact test was used to compare groups. A p value of less than 0.05 was considered statistically significant. The data management soft-ware package used was SPSS version 10.0 for Windows.

RESULTS

The mean age was 43.2 ± 15.5 years and the mean CRPS duration was 2.8 ± 5.2 months.

Depressive temperament (12 patients, 20%) was the most common dominant affective temperament. It was followed by anxious (4 patients, 6.7%) and irritable (4 patients, 6.7%) temperaments with. The frequency of cyclothymic temperaments was 3.3% (2 patients) while no hyper thymic temperament was detected (Figure 1).

To compare the rates of temperaments in healthy population, we used a previous study in our population. Vahip and collagues founded the frequency of depressive temperament 3.1% in Turkish population.⁵ In this study we founded its frequency significantly higher in CRPS patients than normal population ($p=0.00001$, Figure 2). Frequencies of the other temperaments were not significantly higher than the normal population.

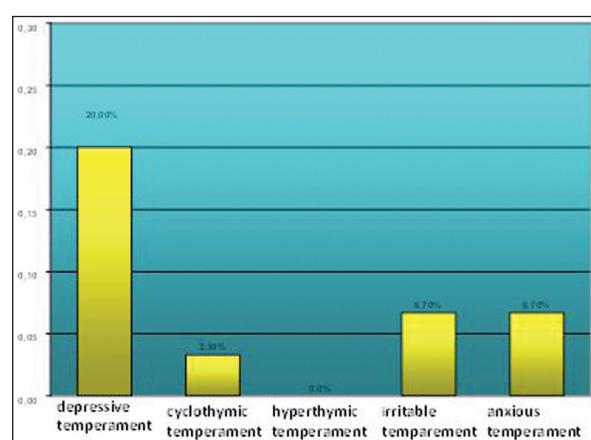


FIGURE 1: The distribution of the dominant mood in cases with CRPS.

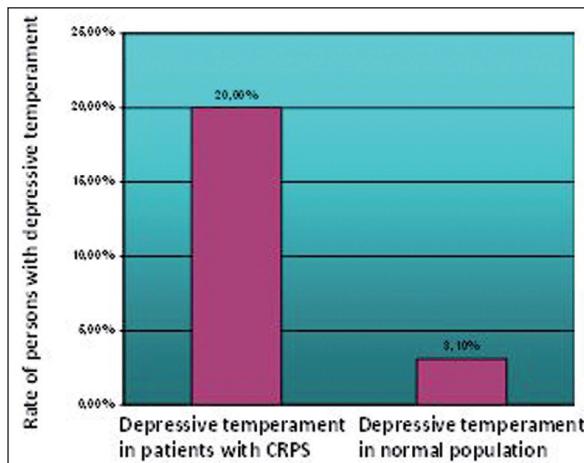


FIGURE 2: Rates of depressive mood in healthy individuals in the community and cases with CRPS.

DISCUSSION

A psychological aspect of CRPS was suggested either as predisposing personality traits, premorbid psychiatric disorders or as a result of the pain and disabilities.¹¹ It was demonstrated that RSD patients were more psychologically dysfunctional than other chronic pain patients.¹² De Vilder commented that patients with CRPS are often considered by physicians and allied health personnel as having a peculiar personality and that they are frequently described as anxious and depressive, emotional, nervous and irritable patients with neurovegetative instability.¹³

Affective temperament is believed to be relatively stable across the individual's life span and also forms the basis of affective disorders.¹⁴ In this study, we aimed to determine the most common affective temperaments in CRPS patients. We found that the depressive temperament was the most frequent temperament followed by anxious and irritable temperaments. Vahip et al. investigated the frequency of temperaments in a group of 658 healthy Turkish subjects in their study and found that irritable (3.7%), anxious (3.7%) and depressive (3.1%) temperaments were the most common ones.⁵ In this study we showed that the

depressive temperament was significantly much more common in CRPS patients than normal population ($p=0.00001$).

Affective temperaments may determine the nature and the existence of the mood disorders. These temperaments are also important in the recognition and management of mood disorders. They represent subaffective forms of mood dysregulation not severe enough to be diagnosed as a formal mood disorder, but affecting individual lives. These temperaments identify persons most at risk for the development of more severe mood disorders.^{14,15} Depression is one of the most common mood disorders in CRPS, detected in 65-96% of patients.^{16,17} Although the causal role of negative mood in the course of chronic pain conditions remains unclear, it was founded that depressed mood contributed to increases in pain in CRPS patients.¹⁸ The pathophysiology of the pain in CRPS is not known exactly but Harden and colleagues showed a significant positive relationship between plasma epinephrine levels and depression scores in these patients.¹⁹

In the light of these informations we concluded that depressive temperament, founded more common in CRPS patients than population, may affect the clinical course of the CRPS. Assessment of temperament after an injury may be useful to develop a more suitable treatment strategy.

Based on this finding, it is suggested that the prevention measures should be focused mainly on patients having depressive temperament in order to reduce the frequency of CRPS.

Conflict of Interest

Authors declared no conflict of interest or financial support.

Authorship Contributions

Concept: Mustafa Serdar Sağ, Nihal Özaras, Erhan Kurt; **Design:** Mustafa Serdar Sağ, Erhan Kurt; **Supervision:** Nihal Özaras, Erhan Kurt; **Data Collection and/or Processing:** Mustafa Serdar Sağ, Nihal Özaras; **Analysis and/or Interpretation:** Nihal Özaras, Erhan Kurt; **Literature Review:** Mustafa Serdar Sağ, Nihal Özaras, Erhan Kurt; **Writing:** Mustafa Serdar Sağ, Nihal Özaras, Erhan Kurt.

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