

2-day course in postgraduate for physiotherapists called "Hands off physiotherapy" at the SaniPro Formazione - Udine

Retraining Pain Memories: Brain Therapy for Patients with Central Sensitization

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Learning objectives:

At the completion of this course, learners will be able to:

1. Apply evidence-based guidelines for chronic pain management to physical therapy practice;
2. Classify pain patients as having nociceptive, neuropathic or central sensitization pain;
3. Provide pain neuroscience education to patients with chronic pain;
4. Devise an effective physical therapy program to remediate pain that engages the patient and considers cognitive/affective/emotive aspects of the pain experience.

Content:

Increasing evidence supports a cardinal role for physiotherapists in the treatment of chronic pain. Physiotherapists combine the unique skills for targeting the chronic pain patient's mind, body and brain concomitantly¹⁻⁵. Yet physical therapists are often unaware of their ability to treat complex patients with chronic pain. Therefore, the course aims at learning physical therapists to apply evidence-based guidelines for chronic pain management.

Chronic pain represents a biopsychosocial problem, with maladaptive changes in the mind, body and brain. Education⁶, exercise therapy⁷ and physical activity interventions are effective treatments for various chronic pain disorders, including fibromyalgia, chronic neck pain⁸, osteoarthritis^{1,9}, rheumatoid arthritis and chronic low back pain². Although the clinical benefits of physiotherapy in these populations are well established (i.e. evidence based), clinicians struggle applying science in daily practice.

One of the reasons why clinicians experience difficulties in applying evidence in practice, is that they are unaware of their capacity to differentiate between various pain types. Indeed, a prerequisite for providing appropriate treatment is classifying pain patients as having either nociceptive, neuropathic or central sensitization pain. Course participants will learn how physical therapists can classify their pain patients without relying on expensive or complex examinations. They will learn using a clinical algorithm for differentiating nociceptive from neuropathic and central sensitization pain in daily

practice^{10,11}. This will allow them to provide individually-tailored physical therapy, targeting mind, body and brain.

At the mind level, reductions in maladaptive pain cognitions, especially pain catastrophizing and fear-avoidance beliefs, as well as increased pain self-efficacy beliefs, have been established as key contributors to positive outcome in exercise therapy programs for chronic pain. Such maladaptive cognitive factors are typically addressed in comprehensive exercise therapy programs that include not only exercise but also pain neuroscience education, stress management, and activity self-management.

At the brain level, it is crucial to consider the concept of pain mechanisms, including aspects like central sensitization and dysfunctional endogenous analgesia in response to exercise as seen in some chronic pain populations. Hence, in patients with chronic pain and central sensitization it seems rational to target therapies at the brain rather than muscles, joints or cardiovascular system. More precisely, modern pain neuroscience calls for treatment strategies aiming at decreasing the sensitivity of the central nervous system (i.e. desensitizing therapies). An increasing number of studies support the use of physical therapy interventions like graded activity and graded exercise therapy, as desensitizing therapies for patients with chronic pain.

Besides maladaptive changes at the level of the mind and the brain, many patients with chronic pain show bodily dysfunctions like impaired neuromuscular control or articular damage. Course participants will learn how to address such dysfunctions within a broader biopsychosocial approach for the management of chronic pain.

Physiotherapists combine the unique skills for targeting the chronic pain patient's mind, body and brain concomitantly. A prerequisite for providing appropriate treatment is classifying pain patients as having either nociceptive, neuropathic or central sensitization pain. Once the chronic pain patients are correctly classified, physiotherapy can include interventions like counselling, activity self-management, and graded exercise therapy tailored to the patient's preferences, needs, pain cognitions, musculoskeletal and central nervous system dysfunctions. A broad biopsychosocial view is required for applying effective physiotherapy for patients with chronic pain, and can be provided in primary, secondary or tertiary care. This accounts for physiotherapists working in the field of musculoskeletal pain, neurology, pediatrics, internal medicine and geriatrics.

Program day 1:

09.00 Introduction

09.15 Chronic pain: a matter of maladaptive changes in the mind, body & brain

11.00 Coffee-break

11.15 Classification of nociceptive, neuropathic and central sensitization pain in physiotherapy practice

13.00 Light lunch

14.00 Skills training classification of pain types in physiotherapy practice

15.30 Coffee break

15.45 Pain neuroscience education in clinical practice: theory

17.00 End of day 1

Program day 2:

09.00 Pain neuroscience education in clinical practice: demonstration & skills training

- 11.00 Coffee-break
- 11.15 Pain neuroscience education in clinical practice: continuation of skills training
- 13.00 Light lunch
- 14.00 Exercise therapy for patients with chronic pain: retraining pain memories
- 15.30 Coffee break
- 15.45 Comprehensive physiotherapy treatment for patients with chronic pain: address sleep problems, stress intolerance and daily activities
- 17.00 End of course

Educational modes:

The course content will be delivered through a mixture of methods, including:

- interactive lectures
- demonstrations (e.g. demonstrating pain neuroscience education)
- practical skills training:
 - learning differential diagnosis between predominant neuropathic, nociceptive & central sensitization pain
 - pain neuroscience education in clinical practice
 - exercise therapy & the patient-therapist communication to facilitate exercise interventions in chronic pain patients
- illustrations (movies of physiological mechanisms & patients, including movies on how exercise therapy is provided)
- case studies

Key references

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