The role of physiotherapy in the management of chronic pain

Judith Semmons

Abstract

The role of physiotherapy in managing chronic pain is challenging. A multidisciplinary approach incorporating several specialities within the pain clinic is recommended. Treatment primarily focuses on the biopsychosocial model: part of the clinician's skill is to decide which part or parts of this biopsychosocial model influence the patient's pain. Key physiotherapy treatments are described: education, patient empowerment and promoting exercise and function. Patients often fear exercise as without appropriate guidance their pain tends to increase so they believe it may be harmful. Patients are advised not to push through pain which may cause 'wind up' and increased pain. Phased activities and goal setting are discussed. More specific or individual treatments are described such as cognitive functional therapy, desensitization and mirror therapy.

Keywords Chronic pain; education; exercise and function; patient empowerment; physiotherapy

Royal College of Anaesthetists CPD Matrix: 1D02, 2E03

Learning objectives

After reading this article, you should understand:

- the importance of physiotherapy in managing chronic pain
- the importance of using a biopsychosocial model involving various health disciplines
- the approach to key physiotherapy treatments; patient education, empowerment and promoting exercise or function
- the intensity and nature of the patient's pain often does not equal the extent of pathology
- with chronic pain, increased pain usually does not indicate increased 'harm'
- the importance of patient engagement and application to treatment

I wish I had a magic wand to make things better, but therapy doesn't work that way.[1]

How many times do healthcare professionals and patients think like this? Such thoughts may be true in any patient treatment, especially when treatment is not going to plan. These thoughts are even more pertinent with patients affected with chronic pain. Unfortunately, healthcare is unable to provide 'a magic wand'; whether the pain is acute or chronic. Chronic pain is defined as pain that persists beyond the normal healing time and is regarded as chronic when it lasts or recurs for more than 3–6 months.[2] Pain is part of everyday life – from the child falling off a bike, who feels better after rubbing the injured knee, to the adult learning to live with chronic pain following a diagnosis of complex regional pain syndrome (CRPS) or ongoing spinal pain. Clinicians are challenged in dealing with this: the postoperative management of acute pain following routine surgery to the more demanding task of pain following complex spinal surgery. Not only will pain be governed by the outcome of the actual cause, but by the individual's response to it – their age, attitudes, character and beliefs being a few influential factors.

Judith Semmons *MCSP MSc is a Specialist Physiotherapist at the Chronic Pain Clinic, The Queen Elizabeth Hospital, King's Lynn, Norfolk, UK. Conflicts of interest: none.*

Following routine surgery, patients are usually offered pain management via the conventional medical model whereas patients experiencing chronic pain are more appropriately treated using the biopsychosocial model, requiring a multidisciplinary approach. This model consists of three strands:

- Bio – What pathology is there and to what extent? Are other investigations or procedures indicated?
- Psycho – How is the patient affected mentally by their pain? Are they ruminating over their symptoms or presenting with significant negative emotions?
- Social – How are everyday factors affecting them? Are there social issues such as poor housing, family tensions or financial concerns?

The role of physiotherapy

Physiotherapy (PT) is frequently a key aspect in managing chronic pain, being part of this multidisciplinary approach. Treatment may be within a hospital, clinic or community setting. Evidence has shown that physiotherapists utilize a broad scope of practice to guide and support people with chronic pain towards a better quality of life.[3]

Unfortunately, despite progress in understanding chronic pain management, patients and some clinicians still have expectations of 'a cure'. Anecdotally, many patients assume 'hands on' physiotherapy will be offered, which is usually not indicated or appropriate. Or they may fear physiotherapy and the thought of exercise and activity, as in their past experience this has made their pain worse or not helped at all.

There is evidence that pain management programmes (PMP), using a multidisciplinary approach, can be effective. Various treatments such as ACT (acceptance and commitment therapy), CBT (cognitive behavioural therapy) and mindfulness[3,4] can be used. Although physiotherapists may not have specific training in these therapies, through experience of treating patients with chronic pain, they frequently incorporate concepts of these strategies into their management.

The key areas of physiotherapy within pain management are providing patients with a better understanding of managing chronic pain through: **patient education**, **patient**

empowerment, advice on exercise management and activity to promote overall function.

Patient education

There are many misunderstandings about chronic pain, some may be associated with an individual's upbringing or beliefs or information gleaned elsewhere. *'My doctor told me that the last person he'd seen with back pain like mine, ended up in a wheelchair'…'My pain is so bad there must be something terribly wrong …'.*

Patients with chronic back pain may have more specific thoughts: *'The more back pain I have, the worse my spine must be'…'Something must be "out of place" in my spine to cause so much pain…'.*

Advice and education is given to patients explaining these misconceptions, reassuring them to have confidence to progress. Teaching sessions either individually, in a group or through a PMP, are provided. The science of pain is explained, so patients can understand why pain becomes chronic or why it does not 'go away'. Also that the extent of their pain does not necessarily equate to the level of pathology (which could be minimal) and in a chronic situation — 'pain does not mean harm'.

Information may be given on certain pathologies such as the spine, i.e that discs do not 'pop in and out' and that a 'degenerative spine' implies age-related osteoarthritis or 'wear and tear'. The type of words used to describe conditions to patients are important: Many patients consider a 'degenerative spine' to be worse than one showing 'wear and tear'. Comments such as…. *'Don't worry - lots of patients get back problems'…'Everyone gets osteoarthritis in the end…'.* could imply to the patient that their pain is not believed or is not as severe as the patient is suggesting. Pain is a very individual experience; like a car journey: two people may go on exactly the same route but due to obstacles encountered along the way, both journeys could be very different. two patients could present with very similar findings on investigation but have very different pain levels because triggers in their everyday life can influence the pain response. Patients need to see that clinicians understand and believe in their pain. This also helps them psychologically.

In other instances, patients may be advised on conditions such as fibromyalgia and CRPS. With this advice, reassurance, and explanation of results, such as an MRI scan, patients are usually more confident to embark on treatment.

Empowerment

Patients need encouragement to believe in themselves and confidence to increase activity regardless of their pain. Unless patients are empowered, progress is likely to be limited as self-motivation and engagement is essential.[4] Patients need to be ready, with guidance, to change their approach to their pain and activity management. Even if a patient has not received a diagnosis but has an understanding of, for example 'neuropathic pain' or that their body has become 'over sensitized', they are supported to 'progress'. Patients need to take responsibility of their pain, accepting that it is 'managed' rather than 'cured'. Some patients achieve this through physiotherapy alone, while others may need additional support from the multidisciplinary team. Occupational therapists (OTs) may advise on a patient returning to work or recommend adaptations in a patient's home to promote function. Clinical psychology may be indicated, assisting patients to overcome barriers to 'recovery' such as dealing with stress and anxiety. These may be due to their pain and can further amplify emotions. Physiotherapy often requires detective work; observing and listening to the patient; their movement or altered movement patterns; their personality and occasionally hidden agendas; aspects in their life such as past trauma or bereavement which may fuel their pain.

Part of any clinician's assessment is considering the three parts of the 'biopsychosocial equation' and assessing *which* third should have priority or whether they should be addressed in equal measure. It may be more appropriate for a patient presenting with considerable stress and anxiety to receive treatment from a clinical psychologist before physiotherapy.

Shockley,[5] who has lived with chronic thoracic spine pain since 2007, describes pain management succinctly: *'Healing severe or chronic pain, I believe, includes transforming our relationship to the pain, and, ultimately it is about transforming our relationship to who we are and to life.'*

Exercise

Exercise is a key part of physiotherapy.[4,6,7] How the advice is delivered, particularly with patients with chronic pain, is vital. Often when patients see a physiotherapist within a pain clinic they have misconceptions of what to expect:

> *My doctor told me because of my back problem I should not do ANY exercise!…The last time I had physiotherapy I was 'laid up' in bed for three days!*

Exercise is part of daily life — promoting function, and not necessarily attending a gym. Carrying out activities to assist daily function can be enhanced by specific exercises — for instance, achieving lumbar flexion while sitting or contracting the quadriceps muscle group, both making it easier to rise from sitting. Getting out of bed and being advised on how to achieve this more easily, or walking to the toilet, are exercise. Where possible, exercise should be within manageable levels of pain; gradually increasing activities or carrying out 'phased activities'.

Advice on pacing activities is a fundamental part of management, either through exercise or functional tasks. Many patients stop an activity due to pain: With pacing, patients learn to briefly stop **before** increasing pain or other symptoms such as paraesthesia, minimizing further 'wind up' of the body's nervous system. The science of pain has shown that thinking about pain is as powerful as pain itself; if a patient is used to an activity increasing their symptoms, they are likely to anticipate pain. By changing how they approach activities — frequently breaking them up and using psychological strategies, they can usually delay the onset of pain. Gradually patients discover they achieve more without this increased pain, thus improving their confidence and self-esteem. This reduces negative thoughts, creating more positive feedback to the brain.

Similarly, patients are encouraged to set goals, to have a purpose in life. Goals may focus on achieving certain functional activities such as getting in and out of the bath; walking a particular distance daily; or a patient might consider goals relating to hobbies which they have lacked confidence in returning to or planning new hobbies which may be more realistic for them. These activities will

incorporate different muscle groups within the body, creating another exercise approach.

Cognitive functional therapy[4] (CFT) embraces many of the approaches already considered but is even more patient specific. It was initially developed to manage disabling chronic low back pain in patients that were not improving (once any symptoms of concern were fully investigated). It is now thought that CFT can be applied to other chronic musculoskeletal conditions. The patient is helped to address their fears, both psychologically and physically using a combined approach. They are taught to recognize how fear, developing inappropriate coping strategies and avoiding fearful movements can amply pain. Patients are gradually exposed to movements they fear or avoid and where necessary carry them out in conjunction with psychological activities (such as mindfulness or specific breathing techniques), promoting relaxation and reducing pain. During assessment, patient factors are identified that can be modified (such as their physical capacity and emotions) and those that cannot (such as their socioeconomic background and past history).

For certain areas of pain, such as the spine, specific core stability exercises may be taught, enhancing spinal stability and offloading irritated spinal structures, to promote function and reduce pain. Mobilizing exercises, providing spinal flexibility should be included to ensure that stabilizing exercises alone are not given which may create more inflexibility in an already inflexible spine.

A*quatic therapy*, where exercises are performed within a pool, encourages function and may reduce pain, due to the warmth and buoyancy of the water. Aquatic therapy often provides greater patient confidence and comfort when exercising and patients may be able to continue this independently in a local or private pool.

Depending upon the patient's symptoms or diagnosis, more specific exercises or treatments may be advised, such as desensitization, mirror therapy, or referral onto an exercise trainer.

Desensitization and mirror therapy[8,9] can be used in conditions such as CRPS and phantom limb pain or conditions where the affected part of the body continues to be painful or over sensitive to non-painful stimuli. For example, in CRPS affecting the hand, the patient may dislike the hand being touched due to pain. Similarly, a patient can experience pain around the stump of an amputated limb or pain in the area that no longer exists (phantom limb pain). These responses are due to abnormal processing within the brain. The strategies are designed to 'remind' the brain of the normal, expected response, to establish normal processing. Or the brain is 'tricked' into believing something is happening i.e creating an illusion through use of a mirror.

With *desensitization* the unaffected area, (e.g. opposite foot), is touched first using different textures or stimuli then the same process is carried out on the affected area or its periphery, to normalize the body's response to particular sensations.

With *mirror therapy*[9] the affected limb is hidden behind a mirror and the unaffected limb is placed in front of the mirror. When the patient moves the unaffected limb, and observes this in the mirror, the brain believes the activity is occurring in the affected one, stimulating a more normal brain response. Desensitization can also be used in conjunction with mirror therapy.

Conclusion

In 1846, having heard the news of the benefits of ether as an anaesthetic, Oliver Wendell Holmes stated: 'The deepest furrow in the knotted brow of agony has been smoothed for ever'.[10] We have made considerable progress since then, but managing chronic pain, enabling patients to experience a better quality of life, whilst living with their pain, remains challenging. Whereas some patients are **unable** to engage with treatment, for others pain management can be life changing - to quote one patient: *'their treatment and response to it, has been a complete revelation'*. ◆

REFERENCES

1 Casey JF, Wilson LI. The flock: the autobiography of a multiple personality. Ballantine books, 1992.
2 Treede RD, Rief W, Barke A, et al. A classification of chronic pain for ICD -11 (eleventh revision). *Pain* 2015; **156:** 1003–7.
3 The CSP. Physiotherapy works: chronic pain, 2014.
4 O'Sullivan P, Caneiro J, O'Keefe M, et al. Cognitive functional therapy: an integrated behavioral approach for the targeted management of disabling low back pain. *Phys Ther* 2018; **98:** 408–23.
5 Shockley SA. The Pain Companion: practical tools for living and with moving beyond chronic pain. Any Road Press, 2016.
6 Faculty of Pain Medicine. Core standards for pain management services in the UK, Oct 2015.
7 The British Pain Society. Guidelines for pain management Programmes for adults, 2013.
8 Butler D, Moseley L. Explain pain. 2nd edn. Noigroup Publications, 2013.
9 Finn SB, Perry BN, Clasing JE, et al. A randomized, controlled trial of mirror therapy for upper extremity phantom limb pain in male amputees *front*. *Neurol*, 2017; 1–7. Article 267.
10 Brennan F, Carn DB, Cousins M. Pain Management: a fundamental human right. *Anesthesiology* 2007; **107:** 205–21.