The role of physiotherapy in the management of chronic pain

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Abstract

The role of physiotherapy in managing chronic pain is challenging. A multidisciplinary approach incorporating several specialities within the pain clinic is recommended. Treatment focuses on the bio–psycho–social model: part of the clinician's skill is to assess which part or parts of this bio–psycho–social 'equation' influence the patient's pain. In addition, three key physiotherapy treatments are described: education, patient empowerment and promoting exercise. Patients are often fearful of exercise due to a past bad experience or they believe it may cause more harm but exercise can relate to activities of daily living, such as getting out of bed. Patients are advised not to push through pain which will tend to cause 'wind up' and increased pain. Phased activities and goal-setting are described. More specific or individual treatments are briefly mentioned such as desensitization and graded motor imagery.

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

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

Learning objectives

After reading this article, you should understand:

- the role of physiotherapy in managing chronic pain
- the importance of using the bio–psycho–social model along with a multidisciplinary approach
- the three key physiotherapy treatments involved: patient education, empowerment and exercise
- that the level of pain a patient experiences does not equal the level of pathology, which may be minimal
- that in a chronic pain situation, increased pain does not mean an increase in 'harm'
- the importance of patient engagement with their treatment

'Then they sat on the ground with him for seven days and seven nights. No-one said a word to him, because they saw how great his suffering was.' (Job 2 V 13 – The NIV Bible, 1978). Pain has been written about since biblical times – to Harry Potter and beyond.

In 'The Order of the Phoenix', by JK Rowling (2003), pain is seen as a positive experience: *'Harry, suffering like this proves you are still a man! This pain is part of being human…the fact that you can feel pain like this is your greatest strength.'*

Pain is in fact, a 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 or persistent pain following a diagnosis of complex regional pain syndrome (CRPS).

As clinicians we have the challenge of dealing with such pains: the postoperative management of acute pain following a routine appendicectomy 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 also by the individual's response to it – their age, attitudes, character and beliefs (to name but a few). Following routine surgery, many patients will be offered pain management using a conventional medical model whereas patients experiencing chronic pain are usually more appropriately treated using the bio–psycho–social model, where a multidisciplinary approach is required. With this model, clinicians approach pain management via three routes:

- Bio – what pathology is there and to what extent? Does a more invasive treatment route, such as surgery need to be considered? Should other investigations be requested?
- Psycho – how is the pain affecting the patient mentally? Are there signs of catastrophization or anxiety?
- Social – how is the 'environment' affecting them? Are there social issues such as poor housing, unsupportive family and worries regarding employment?

This 'three-pronged' treatment approach was recommended for the management of low back pain by the Clinical Standards Advisory Group[1] in 1994 and the National Institute for Health and Care Excellence[2] in 2009.

The role of physiotherapy

Physiotherapy (PT) is frequently a key component in chronic pain forming an integral part of the multidisciplinary approach to pain management. Treatment may be given within a hospital, clinic or community setting. Evidence has shown that physiotherapists can utilise a broad scope of practice to guide and support people with chronic pain towards a better quality of life.[3]

Anecdotally, many patients referred for physiotherapy within a pain clinic are fearful of physiotherapists because they anticipate, often through past experience, that physiotherapy, particularly exercise, will make their pain worse.

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

The author commonly approaches treatment using the 'three E's of pain management: **Educate, Empower and Exercise** (or promote function)'.

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Educate

There are many misunderstandings about chronic pain, some of which can be associated with an individual's upbringing or beliefs or information gleaned elsewhere. *'I must have been a very evil person to have this amount of pain'……'My pain is so bad there must be something terribly wrong with me……'.*

Patients with chronic back pain may have more specific thoughts: *"The more back pain I have, the more my spine is damaged……My back pain is due to something being 'out of place'*[4]*"*

Advice and education is given to patients explaining these misconceptions, reassuring them and giving them confidence to progress. Teaching sessions either on an individual basis, in a group or through a pain management programme, are provided, teaching about 'the science of pain'; explaining why their pain has become chronic or why it has not 'gone away'; that the amount of pain does not equate to the level of pathology they may or may not present with and that most importantly, in a chronic situation — 'pain does not mean harm'.

Information may be given on certain pathologies such as that discs do not 'pop in and out' and that a 'crumbling spine' is not like a digestive biscuit — providing a better understanding of conditions such as fibromyalgia and CRPS. Many patients feel much better when offered explanations — when they recognize that the clinician understands and believes their pain is real.

Empower

With this understanding, even if a patient has not received a diagnosis but has been provided with an explanation of, for example 'neuropathic pain' or that their body has become 'oversensitized', the aim is to assist the patient to 'move on': to empower them. A key aspect of management is guiding and motivating the patient to engage; to take responsibility of their pain; to recognize that pain cannot be 'cured' but 'managed'. Some patients achieve this through physiotherapy alone whilst others may need additional support from the multi-disciplinary team: occupational therapists (OTs) may advise on a patient returning to work or recommend adaptations in a patient's home to promote function. Referral to a clinical psychologist may be indicated, assisting a patient to overcome barriers to their 'recovery' such as dealing with stress and anxiety. These may be due to their pain but can be amplified by their pain.

In the 1976 film, 'The Pink Panther strikes again', Inspector Clouseau remarked: *"Oh yes. It is obvious to my trained eye…that there is much more going on here …… than meets the ear!"*

Physiotherapy often requires detective work; observing and listening to the patient; their movement or altered movement patterns; their personality and occasionally hidden agendas; other avenues within their life, such as a past traumatic experience or bereavement which may fuel their pain.

Part of any clinician's assessment is considering the three parts of the "bio—psycho—social '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, affecting their pain, to receive treatment from a clinical psychologist before attending for physiotherapy.

Shockley,[5] who has lived with chronic thoracic spine pain since 2007, describes pain management very 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[6,7] is a key part of physiotherapy but how the advice is delivered, particularly with patients with chronic pain, is vital. Often when patients see a physiotherapist within a pain clinic they already have misconceptions, views and fears of what to expect:

> *'My doctor told me that 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!'……The spinal surgeon said to me — I'm referring you to a physiotherapist — they'll soon sort you out!'*

No wonder patients sometimes do not turn up for their appointment with the physiotherapist.

Exercise is part of everyday life — promoting function; it does not necessarily require going to the gym and 'building up a sweat'. Carrying out activities to assist everyday activities can be enhanced by specific exercises — for instance, achieving lumbar flexion whilst sitting, or contracting the quadriceps muscle group, both making it easier to rise from a chair. Getting out of bed and being advised on ways to more easily achieve this, or walking to the toilet, are forms of exercise. The key advice is that activities must be carried out, as far as possible, within manageable levels of pain; gradually building up 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 because of pain whereas pacing an activity; learning to briefly stop before the onset of pain or other symptoms such as paraesthesia, minimizes the effect of further 'winding up' the body's nervous system. Pain science has shown that the thought of 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 the way they approach activities — breaking them up more regularly they can usually delay the onset of pain and discover that they can gradually achieve more without increasing their pain. Their confidence to carry out activities subsequently increases — further improving self-esteem and reducing negative thoughts. This indirectly leads to more positive feedback to the brain.

Similarly, patients are encouraged to set goals; to have a purpose in life; a reason to get out of bed! 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 they may consider starting a more realistic, achievable hobby. These activities will incorporate different muscle groups within the body, creating another exercise approach.

For certain areas of pain, such as the spine, specific core stability exercises may be taught as they can enhance stability within a spine, offloading irritated spinal structures, again promoting function and reducing pain. Mobilizing exercises, providing spinal flexibility will need to be included to ensure that stabilizing exercises alone are not given which may create more inflexibility in an already inflexible spine.

Similarly *hydrotherapy*, where exercises are performed within a pool, encourages function and may reduce pain, due to the warmth and buoyancy of the water. This can give the patient greater confidence and comfort when performing exercises.

Depending upon the patient's symptoms or diagnosis more specific exercises or treatments may be advised, such as desensitisation, graded motor imagery, or referral onto an exercise trainer.

Desensitization and graded motor imagery[8,9] can be used in conditions such as CRPS and phantom limb pain or any condition 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 oversensitive or ongoing pain responses are due to abnormal processing within the brain. The strategies are designed to 'remind' the brain of the normal, expected response, and to establish normal processing or 'trick' the brain into believing something is happening (mirror box therapy).

With *desensitization* the affected area or its periphery is touched using different textures or stimuli to normalize the body's response to particular sensations.

Graded motor imagery[8,9] consists of three treatment stages: laterality recognition – being able to recognize pictures of the right or left side of the body and how quickly this is achieved. Often people with CRPS or phantom limb pain lose the ability of discerning left from right. However the brain is plastic and with repeated exercise, this can be learnt again. The second stage is motor imagery – imagining movement of the affected limb before carrying it out or moving the unaffected side first can help to train motor neurones once again. Then finally the third stage is mirror box therapy where 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, the brain believes the activity is occurring in the affected one, stimulating a more normal brain response.

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." We have made considerable progress since then, but managing chronic pain, enabling patients to experience a better quality of life remains challenging.[10] 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"*. ◆

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