

Patient's Coping Strategies on Chronic Low Back Pain

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ABSTRACT

Chronic low back pain is a major public health problem worldwide. In addition to the high prevalence of this condition, studies are showing that patients with chronic pain present with less quality of life, lower levels in general well-being scales, and higher use of health care services. Psychological factors have an important role in an individual's experience of LBP and its impact on their functioning and quality of life. To deal with the suffering, patients use strategies to manage their pain and its impact, also known as coping. The purpose of this review is to examine the coping strategies of patient with chronic low back pain.

Keywords: Coping Strategies; Chronic Pain; Low Back Pain

Introduction

Low back pain (LBP) is a major public health problem worldwide [1]. Chronic LBP is the leading cause of health-related premature retirement and is associated with substantial downstream economic losses and reduced quality of life [2]. It affects around 23% of the population and recurs within 12 months in 24–80% of individuals [3]. In addition to the high prevalence of this condition, studies are showing that patients with chronic pain present with less quality of life, lower levels in general well-being scales, and higher use of health care services. [4] According to a European study, 61% of chronic pain sufferers were less able or unable to work outside the home, 19% had lost their job, 13% had changed jobs because of their pain, and 60% visited their doctor about their pain two to nine times in the previous 6 months [5]. Psychological factors have an important role in an individual's experience of LBP and its impact on their functioning and quality of life [6]. Patients in pain (as compared with the general population) are more likely to suffer emotionally [7]. Psychiatric comorbidities such as depression, anxiety, personality disorders, substance abuse, and posttraumatic stress disorders are prevalent [8]. Fear

avoidance beliefs, depression, anxiety, catastrophic thinking, and familial and social stress are highly prevalent in adults with chronic LBP [9] and can increase the risk of physical disability, [10,11] manifesting as reduced functional capacity, avoidance of usual activities including work, and impaired societal and recreational participation [4]. Regarding the relationships, psychological factors were often suggested to be the causes of motor behaviour alterations as described by multiple models [12-17].

Weich et al. have highlighted the role of memory as a factor that influence the experience of pain [18]. In more details, memory underpins expectation and has a powerful influence in shaping our experience of pain. A 'pain memory template' is a personal signature with which we make sense of the pain signal [19]. The presence of such memories increases the likelihood that a chronic pain sufferer will maintain a host of learned pain responses operating on all levels of the nervous system [20]. To deal with the suffering, patients use strategies to manage their pain and its impact, also known as coping [7]. The psychological effects of pain amounted to an "assault on the self" [21]. Many included studies

described a dichotomy between the past and present self, the ideal and perceived self [21,22,23-28]. This review presents a series of studies aimed at identifying the main coping strategies of patient with chronic low back pain.

Avoidance

One coping example is the fear avoidance model (FAM) [29], which states that a threatening appraisal of pain can induce pain-related fear that can then lead to an avoidance behaviour and disability [29]. This model well adapts to LBP, [30-35] where the avoidance behaviour is particularly expressed by reduced spinal amplitude and velocity of movement as well as higher trunk muscle activity [35-37]. In line with the theory that cognitive factors precede emotional reactions, [38] the FAM [39] proposes that individuals with LBP who believe their pain is 'a sign of serious injury or pathology' [40] may become fearful and avoidant of physical activity that they presume worsens their problem. The avoidance of activity prevents opportunities to challenge negative expectations and may exacerbate pain and disability. The FAM [29,41] explains the development of chronic disability by assigning key roles to the appraisal of threat and fear (manifest as "catastrophizing") as mediators in the establishment of patterns of avoidance behaviour and increasing invalidism [42]. In the context of specific beliefs about illness and in conjunction with emotional responses, anticipation of pain can establish unhelpful patterns of escape and avoidance, resulting in some control of pain, but at a cost of unnecessary pain-associated limitations [42].

Although the FAM presents pain-related fear as the main cause of movement avoidance, other models suggest that other psychological factors also play an important role in the motor behaviour alterations of patients with LBP [12-14,16]. Another factor of interest is catastrophic thinking, which has been shown to increase pain-related fear and has been associated with avoidance behaviours [18,37,43-46]. The tendency towards negative appraisal (or undue pessimism) is a better predictor of low pain tolerance, disability and depression than measures of disease activity or impairment, both at the time of testing and at long-term follow-up [47]. It is not simply a facet of depression or pain severity as it has been shown to be an independent predictor of self-reported disability and work loss. Catastrophisation, initially viewed as a type of ineffective or inappropriate coping strategy, has come to be viewed as a set of dysfunctional beliefs or appraisals [48]. Pain catastrophising is a better predictor of pain-related disability and activity intolerance than pain itself [49]. A third factor is self-efficacy, which has been reported to mediate the relationship between pain-related fear and disability [50-52] and was associated with reduced physical performance [53]. Anxiety and depression are also of interest because they have been associated with pain-

related fear and catastrophizing [40,54]. and are considered as possible contributors to spinal motor behaviour [55-59].

Hypervigilance

While unhelpful beliefs may lead to unhelpful behavioural responses such as avoiding normal spine postures (ie, slouch sitting), movement (ie, flexing the spine) and meaningful activities (ie, spine loading, physical activity, social activities, and activities of daily living and or work), [60] they may also lead to one commonly observed physically centered strategy, hypervigilance [21,61-62]. Hypervigilance to painful or threatening movements, create unhelpful protective behaviours such as muscle guarding, bracing 'core' muscles and slow and cautious movement [60]. Many chronic pain patients, with persistent, distressing and preoccupying pain, show evidence of hypervigilance, a dysfunctional attentional process [19]. Primarily automatic or non-intentional rather than intentional. Hypervigilance emerges when the threat value of pain is high, the fear system is activated and the individual's current concern is to escape and control pain [63]. Further, it may lead to a person to opt for more biomedical and/or invasive interventions in an attempt to ease symptoms (pharmacology, passive therapies, injections), and fix proposed postural faults (eg, postural exercises) or allegedly damaged structures (ie, stem cell treatments, surgery) [64].

Acceptance

Although in many studies participants described a "battle" or "fight" to control the pain and the assault on the self, [22,28,61,62,65] participants also acknowledged the need to learn to live with the pain [23,28,31-32,61,65-66]. Acceptance of pain includes responding to pain-related experiences without attempts at control or avoidance, particularly when these attempts have limited the patient's quality of life and engaging in valued activities and reaching personal goals regardless of these experiences [67]. Corbett, et al. [32] found that learning to live with the pain facilitated the turning point from a trajectory of despair to one of hope for the future. A positive mindset regarding LBP is associated with lower levels of pain, disability and healthcare seeking [36,68,69].

Discussion

Psychological responses to unhelpful LBP beliefs may contribute to a negative mindset regarding LBP, leading to pain vigilance, fear of engaging in valued activities and worries for the future [61]. The experience of chronic pain is also closely related to supraspinal nervous system activity [70]. Coupled with a lack of self-efficacy and adaptive skills to effectively self-manage, these factors can impair mental health (eg, cause stress, anxiety, depression) [71]. The available evidence shows that self-efficacy, psychological distress, and fear mediate the relationship between pain and disability in

people with LBP and neck pain, but catastrophizing does not [72]. In addition, the sequential pathway of the fear avoidance model is not supported by longitudinal mediation studies [72]. Thus, people with persistent LBP with suffering/functional loss beliefs often adopt FAM or hypervigilance, which leads to overprotection of the back, overactivation of the pelvic floor and avoidance of physical activities.

While positive attitudes towards treatment and confidence in benefit from specific treatments have been shown to lead to a two- to fivefold greater likelihood of improvement [73-74], although this finding is not consistent across all studies [75,76]. It is important to recognize that societal influences also play a role in determining the outcome of back pain and development of disability [77]. Beliefs about back pain can be shaped by prevailing community views, health policy decisions around access and payment of health care, legislation regarding sickness absences and compensation and the political agendas of governing powers. Social influences have also been shown to play a more important role than scientific influences in shaping the behaviours and medical decisions of physicians [18]. Three important findings emerge from experimental studies: (1) beliefs influence the perception of pain; (2) pain beliefs can be modified; and (3) modification of beliefs is associated with activation of key anatomical sites and pathways [18].

There is growing evidence from systematic reviews [74,78-80] across a wide range of health conditions that patients' expectations influence their health outcomes. For all patients presenting with high pain-related fear, asking about any previous negative experiences of LBP can provide insight into how these contribute to expectations of pain and its consequences. Interventions may include strategies that discourage pessimistic expectancies, replacing them with more optimistic attitudes towards the achievement of valued goals [81]. The sense-making processes may play a role in pain-related fear is a novel suggestion that contrasts with the 'phobic' processes described by the FAM. An inability to make sense of chronic non-specific LBP symptoms has been documented in other qualitative investigations of the chronic non-specific LBP experience. Studies have described 'the riddle of the puzzling pain' [81] and the 'bewildering situation' of repeatedly unmet expectations of chronic LBP treatment [82]. An inability to make sense of pain placed 'lives on hold', suspending biographical timelines in people with chronic non-specific LBP, one in which the "pause" button has been pressed until such time as the "play" button will return them to their former, pain-free lives [83,84].

There is some evidence that individuals with chronic widespread pain and chronic musculoskeletal pain who cannot make sense of their symptoms are more likely to catastrophize about them [85]. Therefore, interventions that aim to alter community views, targeted to the population as a whole, may be an effective way of

improving outcomes from back pain. Population-based approaches have many potential benefits. Modifying the knowledge or attitudes of a large proportion of the community simultaneously provides social support for behavioural change and maintenance of change over time [77]; and because of the ubiquitous nature of back pain, even small or modest impacts in those at low or medium risk are likely to deliver large improvements on a population-based scale [86]. Importantly, shifting the whole distribution of population beliefs invariably shifts the beliefs of those hard-to-identify high-risk individuals [77] and may prime the population for more targeted approaches [87,88].

Conclusion

Chronic LBP is linked to high intensity pain, disability, psychiatric comorbidities (depression, anxiety, personality disorders, substance) and low quality of life. To deal with the suffering, patients use coping strategies to manage their pain and its impact. The most common strategies are avoidance, hypervigilance, and acceptance. All the accumulated knowledge confirms that acceptance is associated with better adjustment to chronic pain. Making-sense of pain has a key role in acceptance. This highlights the need for interventions that aim to help the patient make-sense of the pain, manage discomfort feelings and return to everyday activities.

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