How important are back pain beliefs and expectations for satisfactory recovery from back pain?

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In this article, we provide an evidence-based review of pain beliefs and their influence on pain perception and response to treatment. We examine the nature of pain perception and the role of cognitive and emotional processes in the interpretation of pain signals, giving meaning to pain and shaping our response to it. We highlight three types of beliefs that have a particularly strong influence: fear-avoidance beliefs, pain self-efficacy beliefs and catastrophising. We examine the influence of beliefs, preferences and expectations on seeking consultation, interventions and treatment outcome from the perspective both of the patient and the health-care practitioner. We then adopt a broader societal perspective, considering secondary prevention and campaigns, which have attempted to change beliefs at a population level. The article concludes with a summary of the key messages for clinical management of patients presenting with painful conditions and suggestions for further research.

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Health care should not only be judged appropriate if it is safe and effective, but also if individual patient preferences have been incorporated into decision-making processes [1]. Calls for more ‘patient-centred’ health care [2], increased patient choice [3], coupled with generally high rates of non-adherence to treatment highlight the importance of understanding and addressing patients’ beliefs, expectations and preferences.

Professional training is predominantly biomedical or biomechanical in emphasis and, while addressing patient symptoms is at the core of the consultation, patient beliefs are seldom systematically identified or addressed. In this article, we review the current research on the nature of beliefs and their potential influence on pain perception, consultation and response to treatment considered from the perspective both of the patient and of the health-care practitioner (HCP). In our view, it is important to consider the modification of beliefs at both an individual and a population level. Having reviewed attempts to modify beliefs at a population level in the context of secondary prevention, we offer a set of key points in understanding and addressing beliefs in clinical management, and suggest a number of priorities for further research.

The role of beliefs in the perception of pain

The nature of pain perception

Recent advances in neuro-imaging are leading to the identification of pain pathways and parts of the brain associated with the shaping of pain perception. For example, functional magnetic resonance imaging (fMRI) has led to new understandings about how a painful stimulus is translated into pain perception in the brain. These new understandings have begun to clarify the cascade of events that follows the arrival of a ‘pain signal’, after which different parts of the brain become activated. It seems that beliefs, memories and emotions translate a pain signal into ‘unique cerebral signatures’ [4], which characterise our pain perceptions in terms of possible actions. This opens up the potential for a whole variety of psychological interventions, which might influence cortical activity.

Cognitive processes translate the pain signal into pain perceptions and offer mechanisms whereby the signal is interpreted in terms of its meaning, potential ‘threat value’ and potential significance for action. Legrain et al. offer a neurocognitive model of pain perceptions which makes a distinction between a ‘top-down selection process’ whereby incoming information is prioritised in terms of its significance, and a ‘bottom-up selection’, or involuntary capture of information relevant for escaping from bodily threat in which salient events are given a stronger neuronal representation [5]. They suggest that top-down attentional processes prioritise the information that enters our subsequent awareness in terms of its value for goal-directed activity.

Influence of cognitive processes on the experience of pain

Reflecting on the role of hypnosis in chronic pain management, Jenson noted that there was clear evidence that the experience of chronic pain is closely related to supraspinal nervous system activity, that hypnosis has direct effects on the supraspinal sites that are linked to the experience of pain and that self-hypnosis training is effective for reducing the severity of pain [6]. Three important findings emerge from these 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. It would seem that in terms of pain perception, we might not be as ‘hard-wired’ as had been supposed.

Within this complex set of inter-relating mechanisms, there appears to be a number of key elements that individually, and in combination, influence the experience of pain. The role of attention is central in pain perception, but the important role of anticipation of pain based on prior (or imagined) experience has not always been recognised. 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.

Weich et al. have highlighted three factors that influence the experience of pain that might be valuable in the context of treating chronic pain: the role of memory; cognitive appraisal and hyper-vigilance; and catastrophising [7]. These are discussed in more detail in Box 1.
More recently, studies have focussed on the possible function of catastrophisation in the context of communication goals [14]. It has been suggested that pain catastrophisers might engage in exaggerated pain expression in order to solicit assistance or empathic responses from others in their social environment, rather than just to manage their pain. Therefore, catastrophisation appears to be important not only as a component of chronic pain but also in the development of chronicity. It would seem therefore that the cognitions associated with catastrophising are best understood as but one facet of a complex style of response to pain and the threat of pain.

Beliefs, emotions and behaviour

Emotional processes not only colour pain perception but also can inhibit or facilitate pain by engaging physiological mechanisms involved with pain modulation [15]. The appraisal of pain is thus influenced not only by our specific beliefs and the degree of conviction with which we hold those beliefs, but also by attribution of its emotional significance. Both are important as possible therapeutic targets and/or as potential obstacles to recovery.

The emotional impact of pain can range from the mildly distressing to the overwhelming. The typical patient lies somewhere between these two extremes and it should be appreciated that a certain degree of distress is appropriate when confronted with persisting pain or pain-associated limitations. A greater level of emotional impact is a predictor of chronicity and should be viewed as a ‘yellow flag’ [16,17], although if of sufficient intensity it should be viewed as an ‘orange flag’ indicating a significant mental health problem for which help from a mental health specialist should be sought [18].
The level of distress is not simply explained by pain intensity, but appears to be mediated by a number of cognitive factors as discussed above, as well as influenced by the nature and extent of the impact of the pain on function and quality of life. Arguably the almost exclusive focus on sickness and disability, as opposed to factors which may protect us from, or minimise the emotional impact, has led us to underestimate the importance of self-reliance in the battle against pain.

The fear-avoidance model \cite{19,20} 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.

In patients who have developed chronic pain and significant pain-associated limitations, there is often a change in self-identity, associated with loss of self-worth, demoralisation and the emergence of a constellation of beliefs indicative of a marked change in self-identity since the development of their chronic pain problem. The process has been described as ‘enmeshment’ \cite{21}, where individuals feel pessimism about the possibility of re-gaining control over pain or its impact.

In clinical management of persisting low back pain therefore, whether adopting a traditional cognitive–behavioural therapy (CBT) approach \cite{22} and tackling beliefs ‘head-on’, or viewing beliefs as obstacles which need to be circumvented, as in the acceptance and commitment therapy (ACT) approach \cite{23}, clarification of the nature and function of the patient’s beliefs is an essential platform from which to construct a clinical intervention.

The nature of beliefs, appraisals and expectations

Types of beliefs

DeGood and Tait identify four principal dimensions of belief (regarding aetiology, diagnostics, treatment expectations and outcome goals) \cite{24}. For purposes of clinical management, the most influential types of belief appear to be beliefs about the nature of pain, specific fears of hurting, harming and further injury and self-efficacy beliefs. Other sorts of beliefs influencing consulting and participation in treatment are reviewed in the next section.

Beliefs about the nature of pain

Pain researchers have identified a number of different types of belief or appraisal about the nature of pain. Beliefs about the extent to which pain can be controlled appear to be among the most powerful determinants of adjustment to pain or the development of incapacity, possibly mediating the influence of pain and depression. These core constructs can also be viewed as specific therapeutic targets. Correction of fundamental misunderstandings about the nature of pain, its effects and probable course are likely not only to facilitate optimal management but also prevent unnecessary iatrogenic misunderstandings and distress. An important stage in optimal adaptation to a chronic condition seems to depend upon patients’ ability to come to terms with what they can and cannot control. This in turn may be affected by specific fears of hurting, harming and further injury.

Specific fears of hurting, harming and further injury

Since the early-mid 1990s, there has been an increasing research focus on the role of fear and avoidance in the development and maintenance of disability \cite{25}. Among people with chronic low back pain, pain-related fear has been found to be associated with reduced lumbar flexion \cite{26}; pain-related fear and pain catastrophising have been found to be stronger predictors of overall disability than pain intensity. One study found that pain-related fear was also the strongest predictor of performance \cite{27}. However, in acute low back pain, only modest correlations between pain intensity, pain-related fear, avoidance behaviour and disability have been detected \cite{28}. 
Self-efficacy beliefs

According to self-efficacy theory, once a situation has been perceived as involving harm, loss, threat or challenge, and individuals have considered a range of coping strategies open to them, what they do will be dependent on what they believe they can achieve [29]. Self-efficacy beliefs were originally considered with reference to specific behaviours required to produce a particular outcome. Thus the action taken by an individual is seen as a consequence firstly of their conviction that they have the skill/ability to execute the behaviour required to produce the desired outcome (self-efficacy expectation), and secondly of their estimation that a chosen behaviour will lead to the desired outcome (outcome expectancy). Asghari and Nicholas have shown that pain self-efficacy beliefs are an important determinant of pain behaviours and disability associated with pain, over and above the effects of pain, distress and personality variables [30].

Taken together, clinical and experimental investigations suggest that perceived coping ineffectiveness might lead to preoccupation with distressing thoughts and concomitant physiological arousal, thereby increasing pain, decreasing pain tolerance and leading to increased use of medication, lower levels of functioning, poorer exercise tolerance and increased invalidism. Such beliefs therefore would seem to have considerable potential as targets within clinical management.

Nicholas has suggested broadening the construct of self-efficacy to encompass a more general belief system associated with self-reliance or resilience enabling people to cope, to a greater or lesser extent, with what life throws at them [31]. However, it is not known to what extent such general core beliefs are modifiable. Therefore, in terms of individual clinical management, it would appear more useful to focus on beliefs about specific aspects of pain or treatment, whether as specific targets for cognitive intervention, or as potential obstacles to optimal engagement in treatment. Self-efficacy has been found to account for the greatest proportion of variance in physical performance even after anticipated pain and re-injury have been excluded, although pain intensity was also a significant (albeit limited) predictor of performance [32]. This challenged the view of harm expectancies and pain catastrophising as primary causal determinants of function, and suggests that they may be components of one's confidence of successful task performance [32]. Treatment recommendations derived from this interpretation emphasise the importance of goal and quota setting, and monitoring of pain and task performance as components of pain management and as such fit well within modern pain management.

The influence of patient beliefs, preferences and expectations on seeking consultation and treatment

The decision to consult

Patients' attitudes, perceptions and beliefs about their back pain, its likely course and the usefulness of specific treatments may influence an individual’s decision to seek health care and to embark on complete treatment, although the evidence to support this is limited by the challenges of data collection from those who do not seek health care. There is evidence from community surveys that about half of those who experience low back pain in a 1-year period will consult an HCP, and that while pain severity influences consulting behaviour in the acute phase (<2 weeks), after this, those who consult are more likely to have increased disability, externalised locus of control beliefs for pain management and depressive symptoms [33]. From consultation cohorts, there is evidence that psychological factors are associated with pain and disability at the first health-care consultation; these factors include dissatisfaction with current symptoms, concern about future pain persistence and difficulty coping with the pain [34]. An individual’s attitudes and beliefs about the relationship between their pain and function appear to be constructs that partially explain disability levels [35]. In general, those who believe more strongly that their pain means they should avoid physical activities and abandon normal roles report higher levels of disability than those with opposite beliefs, and are thus more likely to consult, re-consult and use further health-care resources.
Engagement/participation in treatment

Patients’ beliefs, expectations and preferences about treatments for back pain are likely to influence their engagement in and adherence to treatment plans, yet empirical data are lacking. Patients’ treatment expectations may contribute to treatment response when that treatment is received, because it may serve to enhance motivation and compliance with the treatment or it may predict patient satisfaction with the consultation and their care. Expectations research emphasises the complexity of mind–body interactions, the role of multiple pathways, endogenous opioids and other non-opioid mechanisms [36,37], intermediate processes such as improvements in therapeutic alliance between patient and professional [38] and changes in patients’ perceptions of their problem and coping strategies [39]. These factors may thus affect the degree to which patients engage in and adhere to back pain management advice and treatments.

Treatment outcome

Intuitively, it makes sense that if patients with back pain get the treatment they prefer or for which they hold higher expectations of benefit, then their outcomes might be improved. There is growing evidence from systematic reviews [40–42] across a wide range of health conditions that patients’ expectations influence their health outcomes. Although a review of different health conditions found little evidence for a ‘preference effect’ [43], data from musculoskeletal pain studies, and in particular, back pain, demonstrate relationships between treatment preferences and expectations and patients’ clinical and return-to-work outcomes [39,44,45].

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 [42,46], although this finding is not consistent across all studies [47,48]. In addition, general outcome/recovery expectations, irrespective of treatment, have been shown to influence outcome. The largest prospective population-based study to date of risk factors for work disability after back problems showed that patients’ baseline recovery expectations predicted work disability at 6 and 12 months follow-up [49,50]. Those with very low baseline recovery expectations were 3 times more likely to be off work at 6 months. A large prospective consultation-based cohort demonstrated that patients’ who expect their back pain to last a long time, who perceive serious consequences and who hold weak beliefs in the controllability of their back problem are more likely to have poor clinical outcomes 6 months after consultation [51].

There are several common limitations to the evidence base in this field, including the challenge of capturing the beliefs, expectations or preferences of patients who decline to participate in cohort studies or clinical trials; the study of these factors is usually a secondary objective, and thus, the statistical comparisons often lack power. In addition, few studies have measured beliefs, expectations or preferences beyond the baseline measurement point. It is also likely, but as yet, there are few data to support the hypothesis that the effects of patients’ treatment preferences and expectations may differ according to the nature, invasiveness or unpleasantness of the interventions.

In summary, it seems probable that there are a large number of potential ‘pathways to chronicity’. However, as a precursor to the design of further interventions, we still require a clearer understanding of the nature of change and the underlying processes involved. Attempting to address such beliefs within a reactivation framework has become an integral part of new approaches to the prevention of pain-associated incapacity both in health-care settings [52] and in occupational settings [53].

The influence of health-care practitioners’ beliefs, preferences and expectations on intervention delivery and patient outcomes

The nature of health-care practitioners’ beliefs and treatment orientations

Recently, more attention has been drawn to the role of HCP’s beliefs, preferences and expectations since they are likely to be an integral part of the health-care process, helping to determine success or failure of treatment. The characteristics of the HCP, such as their status as professionals, their therapeutic style, the words they use with patients, their beliefs about the problem and their confidence or
conviction in treatments, have all been suggested as non-specific effects of treatment [40,54,55]. The beliefs, expectations and preferences of HCPs may influence their choice of assessment methods, explanation to patients and treatment approach.

There is evidence that HCPs, such as primary-care doctors, physical therapists and rheumatologists, hold a wide range of beliefs about pain that correlate with their recommendations to patients [56–58]. Studies have emphasised the predominance of biomedically (or structure) orientated pain beliefs among HCPs [59–62]. They have also shown that some HCP groups are more biomedical than are others in their attitudes characterised by advising patients to restrict activity, be vigilant about their backs and beliefs in a structural cause of back pain [58]. Different practice settings as well as professional groups may explain the differences in HCP beliefs and attitudes [58].

There is evidence that at the level of the individual back pain patient, HCPs find it difficult to be consistent in applying best evidence from guideline recommendations. In-depth qualitative interviews have highlighted that the use of diagnostic investigations may be influenced by patient demand, avoidance of risk or giving patients ‘peace of mind’ rather than being driven by clinical need [63]. In making decisions with individual patients, HCPs draw heavily on their own beliefs about the effectiveness of treatments, prior clinical experience and the pre-eminence of their relationship with the patient [63].

Patients’ and HCPs’ expectations have been shown to conflict [64,65]. In a review of qualitative studies, Parsons et al. found differences in beliefs about causation; HCPs’ beliefs were more grounded in a biomedical model, demonstrated by their pathology-driven explanations for pain and limited by concerns about their training and awareness of how to manage patients with musculoskeletal pain [66]. Although patients and HCPs expected straightforward communication and to have an equal relationship, patients also expected a physical examination, continuity of care and the ‘right’ diagnosis; HCPs experienced difficulty in managing these expectations. Perrot et al. highlighted that physicians considered patients’ professional status, analgesic intake and previous sick leave to be predictive of recovery, whereas patients did not [65]. Patients’ and HCPs’ recovery expectations about the role of patients’ age and sex [66], marital status, obesity and working status [65] have been shown to be similar.

The explanations for the attitudes and beliefs, expectations and preferences of HCPs about back pain are likely to be complex. Personal experience of musculoskeletal pain, age, experience in practice, practice setting, specific focus of educational pathways, the influence of respected colleagues or professional bodies plus organisational systems within which HCPs work might all help explain the beliefs that HCPs hold. These factors might influence patients’ outcome through over- and undertreating, failing to use effective pain control or reactivation strategies, reinforcing patients’ unhelpful perceptions about their problem [58], emphasising vigilance, work absence and restricting normal physical activity [61,67,68].

**Influences on design/delivery of interventions and clinical outcomes**

Several studies have shown that the attitudes, beliefs and treatment orientations of HCPs are associated with the advice they give to patients as well as the choice of interventions. Houben et al. showed that HCPs’ pain attitudes and beliefs significantly correlated with, and were the strongest predictor of, their work and activity recommendations to patients [69]. The same authors subsequently found that HCPs with a more biomedical treatment orientation viewed daily activities as more harmful for a low back pain patient compared with those with a more behavioural orientation and that biomedically orientated therapists were more likely to advise patients to limit their activities and work [70]. Bishop et al. described the back pain-related attitudes, beliefs and reported practice of national samples of general practitioners and physiotherapists [62]. Results showed that these HCPs’ pain attitudes and beliefs were significantly associated with their reported practice behaviour, for example, the type of advice given to patients about returning to work. Those with high biomedical orientations and low behavioural orientations were much more likely to advise continued work absence (44.9%), than those with high behavioural and low biomedical scores (11.9%). Other studies have demonstrated that advice to restrict work or daily physical activities is associated with higher fear avoidance beliefs of HCPs [56,57,67].
There is mixed evidence about the role of HCPs’ pre-treatment expectations [72], but some studies have shown these to significantly correlate with the pain relief that patients actually obtain [73], suggesting that somehow they subtly communicate their expectations to patients during treatments and that these then serve to influence patients’ responses.

Studies have started to incorporate measures of HCPs’ attitudes and beliefs and to develop educational programmes that attempt to modify these [74–76]. However, to date, few studies have measured HCPs’ attitudes and beliefs in parallel with patients’ outcomes. Jellema et al. showed that general practitioners’ attitudes were modifiable by a short training session and that their back pain-related attitudes became less biomedical, but the trial showed no significant differences in patient outcomes [74]. Overmeer et al. found that a university-based course of 8 days over 12 weeks resulted in physical therapists’ attitudes and beliefs becoming more biopsychosocial and less biomedical in orientation and that their knowledge and skills on psychosocial factors increased [76]. However, their patients perceived the therapists’ behaviour before and after the education course as similar and were equally satisfied with their treatment and treatment outcome.

Together, this growing body of literature suggests that the attitudes, beliefs and preferences of HCPs might serve as barriers or facilitators to optimal patient outcomes. However, the limitations of available studies include the frequent use of non-validated measurement tools or tools that have been adapted from patient measures for use with HCPs. A recent review highlighted that the number of tools available with which to measure HCPs’ attitudes and beliefs about musculoskeletal pain is limited [77] and that the development and testing of these tools is in its infancy.

Moving upstream from treatment to secondary prevention

Explaining the difference between acute and chronic/recurrent pain studies of population beliefs

While prior back trouble is a strong predictor of future recurrence [78], recovery from a prior episode of back pain results in a better set of beliefs about its consequences. Individuals who have recovered from an episode of back pain in the past have better beliefs about the consequences of back pain than individuals who have never experienced back pain as well as those with current or more recent back pain [79]. This has led to the proposal that those who have survived previous episodes of back pain with little trouble are at reduced risk of future disability than those who present for the first time or those who have had more severe prior episodes [80,81]. Previous experience of back pain that has resolved might result in better pain-coping skills and less fear avoidance during future episodes due to a learning effect. These observations are consistent with current fear-avoidance models that suggest that greater levels of disability from back pain are associated with fear of pain, avoidance behaviours and decreases in daily activities [82].

Integrating the bio-, the psych- and the social in the patient’s understanding of pain and disability

It is important to recognise that societal influences also play a role in determining the outcome of back pain and development of disability. 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 [83].

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 [84]; 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 [85]. Importantly, shifting the whole distribution of population beliefs invariably shifts the beliefs of those hard-to-identify high-risk individuals [84] and may prime the population for more targeted approaches.
Several countries have now performed mass media campaigns in an attempt to shift population beliefs about back pain, with varying degrees of success [86–88]. The outcomes to date have shown concordant results with respect to shifting public attitudes and beliefs about back pain towards being more optimistic and pro-active, yet have yielded mixed results with respect to actual behaviour change [89]. Numerous factors can influence the success of these strategies. It would appear that more intensive and expensive media campaigns might be more effective than low-budget campaigns; television may be more effective than radio and print media; and that explicit recommendations regarding work may be needed if changes in work-related outcomes are wanted [89]. Furthermore, to ensure consistency and reinforcement of the messages of a media campaign, it is important to garner widespread support for the key messages from all the important stakeholders.

Understanding the barriers that need to be overcome to effect change is also fundamental and may vary by setting. For example, as discussed above, it is known that those who seek medical care for back pain usually have more disabling pain and fear that the pain could impair life or capacity for work [90], both risk factors for chronicity. A reasonable extrapolation is that those who seek care may be more likely to seek the care of clinicians who claim special expertise or interest in back pain, in the belief that they would have a higher level of expertise. Recent data from the Australian mass media study indicated that doctors with a self-reported special interest in back pain see almost twice as many back pain patients per week compared with those without a special interest [91]. Yet, contrary to expectation, these doctors were significantly more likely to believe that patients with acute low back pain should rest, that work should be avoided and that imaging is useful. Furthermore, while there was a significant shift towards more favourable beliefs arising as a result of the Australian campaign among doctors overall, the beliefs of doctors with a special interest in low back pain did not change over the course of the campaign. Recalcitrant views such as these, which may relate to vested financial and/or professional interests, have the potential to seriously undermine the success of community education programmes.

Health policy may also help or hinder efforts to shift societal beliefs and behaviours towards better evidence-based care and outcomes. For example, the National Institute of Clinical Effectiveness have recently published guidance for the early management of persistent non-specific low back pain indicating that there is a lack of evidence for therapeutic injections in the back [92]. As a result of this and its impact on decisions about funding for these procedures within the UK health service, there is a lively debate about the use and promotion of interventions for which there is no high-quality evidence of effectiveness.

Enhancing self-efficacy beliefs and focussing on self-directed behaviour

Mass media campaigns for low back pain commonly contain key messages addressing self-efficacy and promoting self-management of back pain. There is strong evidence that self-efficacy beliefs mediate the relation between pain-related fear and pain and/or disability, implying that it is necessary to assess self-efficacy beliefs in addition to pain-related fear in patients with persisting back pain [93]. A recent randomised controlled trial demonstrated that graded in vivo exposure to movements and tasks commonly avoided due to fear of (re)injury in people with chronic back pain resulted in significantly greater improvements in measures of fear of pain/movement, fear avoidance beliefs, pain-related anxiety and pain self-efficacy when compared to a graded activity intervention [94]. This approach is similar to the Sherbrooke model developed by Loisel et al., which has been shown to be successful for achieving good return-to-work outcomes as well [95]. These types of approaches may be even more effective if adopted earlier in the course of back pain.

Conclusions

Patient beliefs are a core part of pain perception and response to pain. The role of central processes in pain perception, illuminated by advances in technology offer the possibility not only of new understandings on the nature of pain itself but also of new intervention approaches targeting patients’ beliefs and expectations, enhancing pain control and improving psychological adjustment. We need to tackle the problem of pain not only at the level of the individual but at a professional and societal level as well. Understanding the nature and influence of cognitions about pain is a core part of all these endeavours.
Key points: Practice points

- The perception of pain is a consequence of the interpretation of pain which is shaped by our memories and prior experience
- Our response to pain is influenced both by our beliefs about it and the emotional significance we attribute to it
- Back pain patient’s beliefs, expectations and preferences should be elicited and used in the clinical decision-making process to help select treatments that have the best chance of promoting patient recovery and return to work
- Beliefs about the nature of pain, fears of hurting, harming and further injury, and self-efficacy beliefs are the most important beliefs to consider
- The attitudes and beliefs of health-care practitioners are part of the dynamic interaction within back pain consultations and are significantly associated with the advice and recommendations they give to patients and their treatment decisions
- Societal influences play an important role in determining the outcome of back pain and development of disability

Research agenda

- Further investigations of the relationship between pain perception and pain behaviour in the laboratory may pave the way for new approaches to the modification of cognitive processes in clinical settings
- We need a clearer picture of how cognitive factors develop across time, the extent to which they are modifiable and their role as potential mediators of different sorts of outcome
- Additional research is needed focusing on the identification and management of cognitions associated with positive adaptation and enhancement of self-help
- Studies that test approaches that incorporate patients’ preferences and expectations into the health-care process, in ways that might genuinely benefit patients are needed
- Improved methods with which to systematically measure different types of patients’ beliefs, expectations and preferences are needed; these need to be valid, reliable and simple to use in clinical settings
- The influences of practitioners’ beliefs and preferences on their clinical decision-making merits further research to determine how best to modify them in ways that change clinical practice and improve patient outcomes
- Valid yet brief screening tools that help practitioners to systematise the assessment of back pain patients and inform clinical decisions, in ways that are acceptable and feasible, are needed. An example of a brief screening tool for primary care is provided by Hill et al [96].
- Further evaluation of public health approaches to improve outcome from low back pain is needed

References


