Psychological approaches to chronic pain management: part 1

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Aims and objectives. The aim of this paper is to provide an overview of the theoretical basis and application of psychological interventions used in the management of chronic pain. In doing this, psychological factors mediating pain and disability will also be reviewed.

Background. A biopsychosocial model of chronic pain is widely purported and pain management is often based upon cognitive–behavioural principles as psychological factors mediating pain and disability have been found to include emotional, cognitive and behavioural components.

Conclusions. This paper provides support for a biopsychosocial model of and for the effectiveness and efficacy of psychological interventions for the management of chronic pain conditions.

Relevance to clinical practice. The application of psychological approaches to chronic pain management is reviewed and discussed. The way in which psychological approaches may be integrated specifically into nursing management of chronic pain is discussed in a later paper.

Key words: biopsychosocial, chronic pain management, psychological approaches

Introduction

The aim of this paper is to provide an overview of psychological interventions used in the management of chronic pain conditions. In this review paper, a biopsychosocial model of chronic illness will be introduced and psychosocial factors mediating pain and disability reviewed. The theoretical basis of various psychological approaches will be outlined and their application to the management of chronic pain presented and discussed with regard to their effectiveness and efficacy. The way psychological approaches may be integrated into nursing management of chronic pain will then be discussed in a later paper.

Biopsychosocial model of pain and illness

Illness, like health, is the result of a complex interaction of biological, psychological and social variables. From this perspective, diversity in illness expression is accounted for by the inter-relationships between biological changes, psychological status and the social and cultural contexts that shape
patients’ perception of, and response to, illness (Gatchel & Turk 1996, Adams 2004).

Biological factors alone do not explain reports of pain, pain-related disability or depression associated with chronic pain. For example, not all patients suffering with chronic pain are depressed or disabled to the same degree. The association between pain, depression and disability appears to be mediated by psychosocial variables and a multidimensional biopsychosocial model of pain emphasizes the influence of these variables. Many authors have indicated the role of psychological and social factors in the aetiology, severity, exacerbation and maintenance of pain, suffering, disability and response to treatment in chronic illness conditions (Waddell et al. 1993, Fordyce 1995, Romano et al. 1995, Gatchel & Turk 1996, Lackner et al. 1996). These have been found to include factors such as level of emotional distress experienced, perceived life control, attentional focus, prior learning history, cultural background, appraisals, beliefs and expectations, environmental contingencies, social support and financial resources (Skevington 1995, Gatchel & Turk 1999, Adams 2004).

Biopsychosocial approaches have the potential to address a range of physical, psychological and social components of chronic conditions (Nielsen & Weir 2001). The following is intended to illustrate the rationale for using psychological interventions in the management of chronic pain. Psychological interventions focus upon emotional, cognitive and behavioural aspects of illness, such as addressing patients’ beliefs by educating them about the condition, reducing anxiety and stress by teaching stress management techniques, and increasing personal control by teaching coping skills. The use of these interventions in chronic pain management have been supported by systematic review and meta-analysis (Morley et al. 1999).

Emotional aspects of pain

Most patients with chronic pain experience emotional distress to a varying degree. The most commonly reported are feelings of anxiety and depression with the latter implicated as a risk factor for developing long-term disability in low back pain (Pincus et al. 2002). Anger, frustration and resentment are also reported, but these have received less attention in the research literature. Various factors such as the nature and prognosis of the condition, coping abilities, social support, attitudes and behaviours of health professionals and patients’ beliefs, can contribute to the extent of emotional distress (Skevington 1995). For example, patients with strong beliefs that their health is controlled by chance or misfortune have been found to be more likely to be depressed, anxious and obsessive-compulsive compared with patients who believed they could exert a measure of control over their own health outcomes (Crisson & Keefe 1988).

Anxiety

Physiologically, anxiety and distress may maintain autonomic arousal with consequent physical symptoms then arising. These in turn may confirm beliefs that an underlying condition exists. Anxiety and depression can also increase the likelihood of patients making cognitive errors or negative appraisals, which could result in avoidance of activity leading to potential disability. Thus negative emotional responses affect biological and behavioural responses which feed back to further negatively affect the emotional response to pain producing a vicious circle with disability as a consequence (Truchon 2001). High levels of anxiety and distress not only affect the experience of pain, but also affect processing and recall of information, hence any treatment plan must address all of these aspects.

Depression

A high incidence of depression has been documented among individuals with chronic pain (e.g. Geisser et al. 1994, Banks & Kerns 1996, Fishbain et al. 1997). Depression has been reported to be associated with higher levels of self-reported pain and pain behaviour, lower levels of physical and psychosocial functioning and poor response to treatment (Haythornthwaite et al. 1998). Depression alongside chronic pain has been associated with feelings of helplessness and loss of control (McDonald et al. 1999). Therefore, restoring a sense of control to the patient often assists in alleviating symptoms of depression which can otherwise confound chronic pain conditions, resulting in poor motivation and inactivity which further exacerbate the condition.

Those who report high negative affect have been found to be more vigilant to bodily sensations and report more health complaints (Bacon et al. 1994, Crombez et al. 2004). Further, Pincus and Williams (1999) have reported that chronic pain is associated with biases in the processing of information. In a controlled study investigating the interpretation of ambiguous homophones, patients with pain were found to exhibit a recall bias towards pain stimuli but not towards depression-related stimuli. This has been confirmed in a more recent study (McKellar et al. 2003). Pincus and Williams (1999) suggested that depression in chronic pain is qualitatively different from that of other depressed groups in that the focus and self-image of patients with chronic pain appears to be related to suffering, dependency and invalidity (Pincus et al.
Cognitive and behavioural aspects of pain

Many of the variables that influence pain intensity and physical and psychosocial disability are cognitive in nature. One of the most researched is coping and coping strategies. The general literature on coping has been most influenced by the work of Lazarus and Folkman (1984). Their transactional model of stress defines coping as ‘...constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing, or exceeding the resources of the person’ (p. 141). This definition highlights the notion of coping as a process, subject to change dependent upon the individual’s appraisal of the situation. In terms of chronic pain, coping may be simply thought of as the strategies (or thoughts and actions) that individuals engage into manage their pain on a daily basis (Katz et al. 1996).

Many models of pain and other chronic conditions give coping responses an integral role in understanding and predicting adjustments to the pain and illness (Turner et al. 2001), though recent studies have highlighted the importance of approaches such as acceptance (McCracken & Eccleston 2003). Identification of the pain coping strategies that have greatest influence on adjustment provides the health professional with an empirical rationale for deciding which coping strategies to teach and encourage and which to discourage.

There is debate amongst authors regarding definitions of coping strategies. Estlander (1989) defined coping strategies as the mechanisms utilized for self-regulation when faced with a stressor such as chronic pain. Each individual’s specific ways of dealing with, adjusting to and reducing or minimizing pain and the distress affects the impact of the coping strategies employed. Differences in the coping styles and strategies employed by chronic pain sufferers have been found to explain some of the variation in functioning apparent in this group (Jensen et al. 1991). A wide variety of coping strategies have been identified and have been differentially classified to include: problem/emotion focused (Lazarus & Folkman 1984), avoidant/non-avoidant (Suls & Fletcher 1985), cognitive/behavioural (Rosenstiel & Keefe 1983, Fernandez 1986) and active/passive (Brown & Nicassio 1987).

Fernandez (1986) has suggested that coping strategies can be classified into physical, behavioural and cognitive. Physical strategies include surgery, medication, physical therapy and the use of electrotherapeutic modalities. Cognitive strategies such as problem solving and cognitive re-structuring all involve attempting to modify pain by cognitive processes, and behavioural strategies attempt to modify behaviours through, for example, operant conditioning, pacing and goal setting. In contrast, Keefe et al. (1992) suggested that all coping strategies are cognitive, thus ‘behavioural strategies’ are more suitably viewed as the outcome of a cognitive strategy. In this respect taking medication, which is considered by some to be a behavioural strategy, is seen as the outcome of a cognitive attempt to cope with the pain (Richardson and Poole 2001). Thus in practice it is often difficult to differentiate between a cognitive and behavioural approach and the two are generally combined.

According to Endler et al. (2001), individuals use four main types of strategy to cope with health problems: (i) distraction, (ii) palliative, (iii) instrumental, and (iv) emotional preoccupation. Distraction coping involves thinking or engaging in activities unrelated to the health problem. Palliative coping includes soothing strategies aimed at alleviating the unpleasantness of the health problem. Instrumental coping is analogous to task-orientated or problem-focused coping in the general coping literature and involves strategies such as finding out more information about the illness or seeking medical advice. Emotional preoccupation is similar to emotion-focused coping and involves focusing on the emotional consequences of the illness. In a study conducted on 137 participants with chronic illness and 137 participants with minor acute health illnesses recruited voluntarily from the general public in Canada, Endler et al. (2001) found that that the group with chronic conditions often use more emotional preoccupation coping strategies and instrumental coping strategies than those with acute illnesses, the latter using more palliative coping strategies to soothe their symptoms. Although the findings may not be as generalizable to a clinic population or those with more severe acute illnesses, it was interesting to note that those with chronic conditions were more likely to use a combination of various and varied coping responses to manage their condition and adjust their lifestyle accordingly.

Brown and Nicassio (1987) classified coping strategies as either active or passive, based upon their relationship to levels of pain severity and psychosocial functioning. On the one hand, active strategies were defined as efforts by the patient to function despite the pain and include positive coping self-statements, pacing, positive social comparisons, regular
exercise, distraction, seeking social support and task persistence (Gatchel & Turk 1996).

On the other hand, passive strategies reflected a tendency to relinquish control and depend upon others and have been found to include pain-contingent rest (i.e. rest taken in response to the level of pain experienced), guarding, wishful thinking, avoidance of activity, catastrophizing, and the use of sedative hypnotic medication. Brown and Nicassio (1987) noted that whilst active coping strategies were related to reduced pain severity, lower levels of depression and less functional impairment, the reverse applied to passive coping strategies. Whilst passive strategies may be appropriate in some instances, particularly with regard to acute episodes, in chronic pain without comorbidity, passive strategies are often viewed as ‘maladaptive’. However, as previously discussed, the coping strategies used in any given situation are dependent upon contextual factors and the individual’s appraisal of these. Therefore, a passive strategy in one instance may be in fact be adaptive in another. The skill is to know what is appropriate for each individual’s situation at any given time (Richardson & Poole 2001).

Catastrophizing, defined as ‘an exaggerated negative orientation toward pain stimuli and pain experience’ (Sullivan et al. 1998, p. 253), has consistently been found to be significantly related to heightened pain severity in a wide variety of chronic pain conditions (Sullivan et al. 2001) and has also been found to be related to lower pain thresholds and pain tolerance levels in normals (McCracken & Eccleston 2003). Although there is debate as to whether catastrophizing is best characterized as an appraisal rather than a coping response (e.g. Jensen et al. 1991, Sullivan et al. 2001), it has been found that reducing catastrophic thoughts is useful in terms of increasing adjustment to osteoarthritis pain (Keefe et al. 1990, Severiens et al. 2001).

Lethem et al. (1983) developed a fear avoidance model of chronic pain where catastrophizing leads to fear of pain, leading in turn to avoidance of activity, hypervigilance, depression and disuse resulting in disability. Fear-avoidance beliefs and fear of movement/reinjury in particular have been shown to be strong predictors of physical performance and pain disability (Waddell et al. 1993, Crombez et al. 1998, Vlaeyen et al. 2002). Therefore, reducing catastrophizing through education and coping skills training and increasing activity according to this model, will reduce depression and disability. Although Geisser et al. (1999) argued that rather than reduce the use of unhelpful passive strategies the use of helpful active strategies should be encouraged.

Coping is influenced by a number of factors including mood, disability, beliefs, other symptomatology, level of support in the marital relationship and locus of control, i.e. the extent to which individuals believe that they are in control of outcomes and the extent to which they believe in chance or misfortune (Skevington 1995). Patients who are most adaptive are those who have strong internal beliefs, strong beliefs in the powers of others such as health professionals and weak beliefs in chance. Pain beliefs may affect treatment outcomes and patients’ beliefs about their illness affect their attitudes to coping skills, adherence and compliance with treatment, e.g. if patients believe they are not in control of their condition, they are less likely to adhere to a self-management programme (Williams & Keefe 1991).

In addition, they may believe that a certain course of treatment is effective and another ineffective. Several authors have suggested that coping strategies may be an important mediator between pain and depression and thus disability in low back pain (e.g. Waddell et al. 1993, Gatchel & Turk 1999).

Coping skills can be developed by teaching cognitive techniques such as problem solving, correction of distorted cognitions by education and encouraging physical activity (Harding & Williams 1995). The provision of information is important in that it enhances perceived control about pain and thus anxiety and distress is reduced (Arntz & Schmidt 1989). A broad range of coping styles should be taught as what may be effective in reducing pain for one individual (adaptive) on one occasion, may not be on another, or for a different individual. Richardson and Poole (2001) suggest that assessment of coping styles could identify the type of coping that leads to a positive outcome for the individual patient in terms of facilitating adaptation to their condition. Coping strategies are reviewed in the second part of this paper.

Perceived self-efficacy (i.e. an individual’s belief that they can succeed at something they want to do) is closely related to coping ability. Perceived control and higher self-efficacy have been shown to be positively related to lower levels of state anxiety and greater use of more adaptive coping strategies (i.e. task-orientated rather than emotion-focused coping), which in turn have been positively related to psychological and functional outcome measures (Scharloo & Kaptein 1997). Any treatment of chronic pain related to the development of coping strategies and anxiety reduction should therefore also include strategies to increase self-efficacy.

Biopsychosocial approach to management of chronic illness and pain

Psychosocial factors can be integrated with physical factors within a biopsychosocial rehabilitation programme (Jensen et al. 1994, Nielson & Weir 2001). Psychological and social
factors may act indirectly on pain and disability by reducing physical activity, with consequent loss of flexibility, strength and endurance. Cognitive factors may have an effect on physiological variables associated with the production or exacerbation of nociception, whilst cognitive interpretations and affective arousal may affect physiology by, for example, increasing sympathetic nervous system arousal, production of endogenous opioids and elevated levels of motor activity.

Treatment approaches should be designed to address the contributing physical factors and also patients’ behaviour patterns regardless of the specific pathophysiology. In chronic pain, treatment should focus on providing the patient with techniques to gain a sense of control over the effects of pain as well as modifying the affective, behavioural, cognitive and sensory aspects of the pain experience. Behavioural techniques can help patients to show that they are more capable than they may have thought and cognitive strategies help to place affective, behavioural, cognitive and sensory responses under a patient’s control (Turk et al. 1983). The assumption is that long-term maintenance of behavioural changes will only occur if the patient has learned to attribute success to his or her own efforts. It has been suggested that these approaches can result in changes in beliefs about pain, coping style and reported pain severity as well as direct changes in behaviour. Treatment approaches that result in increases in perceived control over pain and decreases in catastrophizing have also been associated with reductions in pain severity ratings and functional disability (Severeijns et al. 2001).

In terms of evidence for this approach, a systematic review by Guzman et al. (2001) of 10 trials involving 1964 patients found that intensive, multidisciplinary biopsychosocial rehabilitation with a functional restoration approach, improved pain and function when compared with out-patient non-multidisciplinary rehabilitation or usual care.

It is important to identify relevant physical, psychological and social characteristics before developing treatments matched to patients’ characteristics. Treatment efficacy should be evaluated as different treatment components have been shown to maximize outcome for different subsets of patients. For example, Turk and Rudy (1988) found that a mixed group of chronic pain patients could be classified into three subgroups based on psychosocial and behavioural characteristics using standardized inventories. The authors refer to these groups as ‘dysfunctional’, ‘interpersonally distressed’ and ‘adaptive copers’. The dysfunctional group was characterized by high levels of pain, life interference, emotional distress and functional limitation, the interpersonally distressed group was characterized by low levels of social and personal support and the adaptive copers group was characterized by low levels of pain, functional limitation and emotional distress. This model has since been replicated in individual pain conditions such as temporomandibular pain (Rudy et al. 1989), headache (Walter & Brannon 1991), low back pain (Talo 1992) and fibromyalgia syndrome (Turk et al. 1996).

In conclusion, treating chronic pain patients as a homogeneous group may deter the development of effective management. It is suggested that treatment approaches may be adapted for different groups of patients. In particular, patients who exhibit high levels of distress and have low levels of support may require greater training in coping skills than patients who are already coping adequately with their pain (Richardson & Poole 2001). Deciding which treatments should be used has to be based on the evidence for which has the greatest efficacy for particular subsets of chronic pain patients. Psychological approaches often used as, and as part of, treatment interventions are now reviewed in subsequent sections.

Psychological approaches

There is general agreement that psychological approaches adopted in the management of chronic pain and disability can make a contribution to the management of chronic pain (Morley et al. 1999, Astin et al. 2002). There are a number of psychological approaches that can be used in the management of chronic pain conditions. These include: psychophysiological, behavioural, cognitive—behavioural and psychodynamic and these are now reviewed in turn. The most popular and readily adapted for nursing management is the cognitive—behavioural approach which has recently been re-formulated with regard to chronic pain (Sharp 2001) and, as previously stated, has been applied successfully within rehabilitation programmes for chronic musculoskeletal pain conditions (Morley et al. 1999).

Psychophysiological approaches (including relaxation)

Psychophysiological approaches consider the interaction of physiological and psychological factors in the development of chronic pain. Psychophysiological studies examine the influence of psychological events (thoughts, memories and emotions) on physical changes that produce pain (Gamsa 1994). Psychophysiological therapies (PPT) attempt to change cognitions through the manipulation of physiological responses and have been extensively studied because of the inconsistent findings associated with the role of physical responses such as muscle activity, vascular changes, or autonomic arousal in pain disorders such as headache, myofascial pain and low
back pain (Andrasik & Holroyd 1980, Flor et al. 1991). PPT therapies such as relaxation and biofeedback have been found to be useful in the treatment of muscle contraction headache and chronic pain by training patients to reduce levels of muscle tension thought to be contributing to their pain. However definitive evidence of the effectiveness and efficacy of these approaches is lacking.

In explaining the mechanisms that link abnormal psychophysiological patterns with pain, two general models are proposed. Firstly, general arousal models propose that frequent or prolonged arousal of the autonomic nervous system, including sustained muscle activity, generates and perpetuates pain. In contrast, specificity models explain the development of specific types, or sites, of pain in relation to individual differences in psychophysiological responses to environmental stressors due to genetic predisposition, previous experiences and personality type (Collins et al. 1982). The mechanisms involved, however, are not well understood. Whatever the mechanism, the aim of psychophysiological based interventions such as relaxation techniques are designed to reduce levels of muscle activity and autonomic arousal, thereby reducing pain.

The reflex-spasm model suggests that, in response to tissue injury, inflammation and subsequent pain, increased muscle tension occurs to protect and immobilize the injured area, preventing further tissue damage. When increased muscle tension is prolonged, muscle fatigue can occur with associated physiological changes which contribute to the pain experience. Using such a model, the aim of treatment is to reduce muscle tension in the affected area, thereby breaking a cycle of pain and spasm. The model received some support from early electromyographic (EMG) biofeedback studies; however, the lack of findings of increased motor activity in areas of pain has not always supported this model. Findings of abnormal (asymmetrical) EMG patterns in chronic back pain have been supported by more recent literature, e.g. Lariviere et al. (2000).

The stress-causality model postulates that a person responds to perceived pain or external stress by undergoing a generalized physiological response, as seen in arousal states (Collins et al. 1982). Local and general muscle tension levels are elevated, along with other physiological parameters. The aim of treatment using this model would be to assist the person to reduce the arousal state and to attain a relaxation response.

A third model (cognitive factors model), postulates that relaxation methods alleviate pain through cognitive factors. Relaxation methods are seen as a technique to reduce feelings of general anxiety and increase feelings of control. Treatment using the cognitive factors model emphasizes the importance of teaching stress reduction and coping skills.

These studies demonstrate that it may be possible to control autonomic and physiological responses to pain. However, physiological response has not been shown to correlate closely with subjective pain report (Taylor & Lee 1991). In terms of perception of pain, this lack of correlation may be due to an individual’s beliefs and expectations and may not reflect the ineffectiveness of a strategy in controlling the physiological component of the pain.

Relaxation techniques have been found to reduce anxiety and thus pain (Philips 1988, Sloman et al. 1994) and are often used in rehabilitation programmes, obstetric care, palliative care and in the management of asthma (Ritz 2001). Furthermore, such techniques have become popular with complementary practitioners in treating symptoms of anxiety and depression, with anecdotal reports of success. Carroll and Seers (1998) considered evidence for the effectiveness of relaxation in the treatment of chronic pain. They reviewed nine randomized controlled trial which included a total of 414 patients. Three studies found relaxation to be effective (Shaw & Ehrlich 1987, Dulski & Newman 1989, Sloman et al. 1994). Two studies found the comparison treatment led to greater improvement than relaxation (Okeon et al. 1983, Gunther et al. 1994) and the remaining trials did not find any significant differences between relaxation and comparison treatments (Funch & Gale 1984, Graffam & Johnson 1987, Seers 1993, Donaldson et al. 1994). Carroll and Seers (1998) concluded there was insufficient evidence to support the effectiveness of relaxation for chronic pain. In addition, they reported that the methodological quality of studies considered for inclusion in the review, was poor and that small sample sizes limited the external validity of many studies.

Other issues associated with this type of intervention principally involve client motivation and individual patient characteristics which can affect treatment outcome. As these interventions rely on regular home practice, compliance can become an issue in unmotivated clients. Despite the lack of scientific evidence for relaxation, it continues to be frequently used by practitioners within the NHS, mainly as an adjuvant intervention and is becoming increasingly popular with practitioners working in the private sector.

In summary, results suggest that relaxation may be of value in pain management, though longer term benefits have not yet been studied. Further research is needed in this area to provide definitive scientific evidence of therapeutic efficacy.

Cognitive–behavioural approaches

Patient behaviour is an important aspect in the development and maintenance of chronic pain and pain-associated disability (McCracken & Eccleston 2003). Behaviour theory
defines pain by the presence of ‘pain behaviours’ (Fordyce 1976, 1986). Pain behaviours are verbal and non-verbal signs of distress that are independent of subjective report. Early interpretations focused upon ‘overt’ behaviours such as staggering and grimacing and environmental contingencies whereas more recent approaches to this model have acknowledged the effects of biological and psychological variables on behaviour. The behavioural framework has expanded to incorporate coping, and latterly, to include acceptance of chronic pain. Pain behaviours are believed to be instrumental in the development of avoidance of activity, which then also becomes a pain behaviour (Waddell & Turk 1992). Therefore an important aim of rehabilitation is to increase physical and functional ability. Interventions with a behavioural component include exercise which is an effective major component of most, if not all, pain management and rehabilitation programmes. Goal setting and pacing are also behaviourally based techniques that can be used to increase and sustain physical and functional activity. These techniques are reviewed in the second paper.

Cognitive theory examines constructs such as expectations and beliefs about pain, personal control, problem-solving abilities and coping skills (Gamsa 1994). Cognitive models make a clear statement about the relationship between cognition, affect and behaviour. They are usually subsumed under the cognitive–behavioural model because cognitive processes and behaviour are intricately linked.

The assumption of cognitive models of pain is that cognitive activity and an individual’s emotional distress or behavioural difficulty is not a direct reaction to an untoward life event but rather a consequence of how that event is perceived.

Cognitive assessment and intervention to control pain attempt to increase patients’ self-efficacy. It involves identifying those dysfunctional thought processes and irrational beliefs that lead to emotional distress and which increase pain perception and experience. Cognitive events which amplify pain syndromes have been found to include catastrophizing, over-generalization, low frustration tolerance, external locus of control and mislabelling of somatic sensations (Ciccone & Grzesiak 1984). Thus the focus of the cognitive approach to treatment is to change the way individuals think about their pain.

In the cognitive–behavioural approach, the behavioural model is expanded to incorporate cognition and affect within behavioural therapy. It views the way in which individuals react to pain as a complex multidimensional response, though does not offer a model of the cause of the pain.

A variety of psychological interventions are combined within this framework which emphasizes education, control by patients and coping strategies. Cognitive–behavioural therapies consider the cognitive effects on behaviour and attempt to change physiological responses through the manipulation of cognitions. CBT helps patients to identify and modify maladaptive beliefs and behaviours and use adaptive coping strategies to manage their condition (Turner et al. 2001) and usually comprises a combination of cognitive and behavioural interventions such as education, acquisition of coping skills and operant conditioning. Historically, there has been a tendency for cognitive–behavioural interventions to be dominated by behavioural components. In response to this, Sharp (2001) has offered a re-formulated cognitive–behavioural therapy model which focuses more directly on patients’ thoughts about and appraisals of, their pain based upon suggestions that the relationship between pain and arousal is mediated by appraisal.

Cognitive–behavioural approaches are used extensively in pain programmes with some evidence of effectiveness in restoring function and mood and reducing pain and disability-related behaviour (Harding & Williams 1995, Morley et al. 1999). The latter authors carried out a systematic review and meta-analysis of 25 randomized controlled trials of cognitive–behavioural therapy and behaviour therapy for chronic pain in adults and concluded that active psychological treatments based on the principle of cognitive–behavioural therapy were effective. Several theories have been suggested as mediating the efficacy of cognitive–behavioural therapy. These include a reduction of the stress response by increasing control and reduction of fear, closure of the proposed gating mechanism to painful stimuli physically by postural correction and psychologically by reduction of anxiety and fear. Disruption of reverberatory neural activity, activation of the endogenous pain control system and a reduction of pain associated with immobility by stretching and exercising muscles appropriately have also been suggested (Adams 2004, Zusman 2004).

The primary aims of cognitive–behavioural therapy are:

1. To help patients to alter counterproductive beliefs that their problems are unmanageable, i.e. help them to become resourceful problem solvers and enable them to cope effectively with their pain, emotional distress and psychosocial difficulties.
2. To assist patients in learning to monitor their thoughts, emotions and behaviours and to identify relationships between these factors and environmental events, pain, emotional distress and psychosocial difficulties.
3. To teach patients to develop and maintain effective and adaptive ways of thinking, feeling and responding, which can be used to cope with any recurring problems that may be experienced after treatment has ended such as problem
solving in everyday activities and reduced catastrophizing regarding any increase of pain, for example, after activity. The idea is to maintain any gains resulting from treatment.

4 To teach patients to perform behaviours such as relaxation techniques, postural correction and exercise at appropriate times in order to cope effectively with pain, emotional distress and psychosocial difficulties and reduce dependency on medication. This is particularly applicable to nurses and other health professionals as levels of physical fitness, mobility and posture and thus increasing ability to perform functional abilities, can be improved through a graded exercise programme as part of a pain management programme. Relaxation skills to improve the ability to manage stress may also be taught.

The second paper reviews treatment components of cognitive–behavioural therapy.

Psychodynamic psychotherapy and counselling

There is a subset of people suffering from chronic pain who do not benefit from cognitive–behavioural approaches and may prove unresponsive to either medical or psychological interventions. These patients may benefit from more traditional psychodynamic psychotherapy, which should be performed by a qualified clinical psychologist, psychotherapist or counsellor. The theory underlying psychodynamic models of chronic pain is that emotional factors may generate and perpetuate chronic pain (Engel 1959). Issues such as physical and sexual abuse, emotional neglect, bereavement, loss and abandonment may be explored in relation to this subset of people with chronic pain within a counselling context. The major contribution of these models is that they recognize the individuality of each patient and that past experiences, family dynamics, affect and personality all play a role in each patient’s perception and response to pain (Adams et al. 1996). Psychodynamic and counselling approaches to psychotherapy that are relational in orientation can be especially helpful to clinicians working with those with pain because they allow for the application of cognitive–behavioural techniques without interfering with or minimizing the importance of exploring the meaning of a patient’s pain and suffering. An increased awareness of these aspects of the patient’s life deepens the therapist’s capacity to understand the patients interpersonal needs and conflicts, and in so doing creates a context that can facilitate the implementation of cognitive–behavioural interventions. Such approaches have been found to be helpful in cancer. In a meta-analysis of 25 psychoeducational interventional studies for cancer, Devine (2003) found that strong evidence existed for relaxation-based cognitive–behavioural interventions, education and supportive counselling. Thus a combined approach may be a useful and appropriate form of intervention for certain groups of chronic pain patients.

Conclusions

Chronic pain conditions are the result of a complex interaction of biological, psychological and social variables. Psychosocial contexts shape patients’ perceptions and response to pain. Psychosocial factors can be integrated with physical factors in a way that can address these factors within an interventional programme. According to a biopsychosocial model, treatment approaches should not only address the biological basis of symptoms but should also incorporate the various psychological and social factors that have been found to affect pain, distress and disability. Psychological approaches focus upon emotional, cognitive and behavioural aspects of chronic pain, such as addressing patients’ beliefs by educating about their condition, reducing anxiety and stress by teaching stress management and teaching strategies to manage pain more effectively. There are a number of psychological approaches that can be used in the management of chronic conditions and each has been reviewed in this article. There is general agreement that psychological interventions may be important adjuvant therapies in the medical management of chronic pain. Most scientific evidence exists for cognitive–behavioural approaches, which combine two major psychological models and incorporate education, coping strategies, physical rehabilitation and self-management. These approaches are often used in pain management programmes, though factors such as heterogeneity of the programmes, differences in patient characteristics, assessment instruments and outcome appraisal make evaluation difficult. There is considerable scope for future research in this area. There is general agreement that health professionals need to include assessment of psychosocial factors as part of routine patient assessment and address these within an interventional programme.

Contributions

Study design: NA, HP, CR; data analysis: NA, HP, CR; manuscript preparation: NA, HP, CR.

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