

Psychosocial interventions for managing pain in older adults: outcomes and clinical implications[†]

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Editor's key points

- Chronic pain is common in older adults, and pharmacotherapy can be limited by side-effects.
- Psychosocial interventions have a clear role in older adults with chronic pain.
- The strongest evidence for effectiveness is for cognitive behavioural therapy.
- Mindfulness techniques and emotional disclosure require further study, but do show some promise.

Summary. Interest in the use of psychosocial interventions to help older adults manage pain is growing. In this article, we review this approach. The first section reviews the conceptual background for psychosocial interventions with a special emphasis on the biopsychosocial model of pain. The second section highlights three psychosocial interventions used with older adults: cognitive behavioural therapy, emotional disclosure, and mind–body interventions (specifically mindfulness-based stress reduction and yoga). The final section of the paper highlights important future directions for work in this area.

Keywords: age; chronic pain

Persistent pain (i.e. pain that lasts for >6 months) is a very common problem in older adults. It is estimated that more than 116 million American adults suffer from persistent pain.¹ Compared with younger and middle-aged adults, persistent pain conditions are much more likely to affect older adults.² Older adults having persistent pain are more physically disabled and less likely to be able to sustain an independent and functionally effective lifestyle than those who are pain-free.³ In older adults, higher levels of pain have also been linked to slower cognitive function, increased psychological distress, and a greater risk of being diagnosed with anxiety or mood disorders.^{4–7}

With growing evidence of the impact of persistent pain on psychological and social functioning, has come increased interest in the use of psychosocial interventions to manage pain. The purpose of this article is to provide an overview of the psychosocial approach to managing pain in older adults. The paper is divided into three sections: (i) the conceptual background for psychosocial interventions; (ii) a description of the psychosocial interventions most typically used to manage pain in older adults and summary of the data from outcome studies testing these interventions; and (iii) future directions for research in this area.

Conceptual background

Historically, the management of pain in older adults has been dominated by a medical model that views pain as a

warning sign of tissue injury or damage. Clinical practitioners, researchers, and public health experts working with older adults are increasingly dissatisfied with the medical model because it fails to explain several observations: (i) pain reported by older adults often shows a very poor correlation with evidence of tissue pathology; (ii) treatments designed to eliminate or correct tissue injury often fail to relieve pain; and (iii) non-biomedical factors (e.g. psychological and social factors) can play an important role in the pain experience. Dissatisfaction with the medical model has been one of the most important factors fuelling interest in new models of pain (e.g. gate control theory of pain, neuromatrix theory of pain, and view of pain as a homeostatic emotion).

Over the past decade, the biopsychosocial model has gained recognition as a useful approach to conceptualizing pain in older adults. This model maintains that pain is a complex experience that can be influenced by its biological, psychological, and social context. The biopsychosocial model depicts a dynamic system in which, for example, contributing factors (e.g. disease activity) in one context (e.g. biological) can influence factors in the other contexts (e.g. beliefs about pain in the psychological context, social support in the social context). The system is dynamic and inter-related; therefore, interventions aimed at one context (e.g. a treatment to reduce depression) can influence other contexts (e.g. improved self-management, enhanced social interaction).

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Biological context

As might be expected, patients with more advanced disease (e.g. severe osteoarthritis, advanced cancer) tend to report higher levels of pain, though the correlations between indicators of disease activity and pain report are typically modest.⁸⁻⁹ Biomarkers of inflammation (e.g. gene expression profiles in peripheral blood leucocytes) have been found to be associated with increased pain and disease progression in older adults having osteoarthritis.¹⁰ Evidence of inflammation has been shown also to predict response to medical interventions designed to reduce pain (e.g. intra-articular corticosteroid injections for arthritic knee pain).¹¹ There is growing evidence that genetic variations may predispose individuals to develop chronic pain conditions such as widespread body pain.¹²⁻¹³ Comorbid conditions are common in older adults and can increase the risk of pain and complicate pain management.¹⁴ Recent studies also suggest that there may be differences in the brain structure and function of older adults who have persistent pain. For example, Moayed and colleagues¹⁵ reported that, compared with pain-free individuals, patients having persistent temporomandibular pain are much more likely to show abnormal age-related whole-brain atrophy.

There are a number of challenges related to the use of a strictly biomedical approach to pain management in older adults. The use of pain medications can be challenging because of age-related physiological changes that modify drug absorption, bioavailability, and transit time.⁵ Furthermore, psychological factors (e.g. patient reluctance to report pain, fatalistic views of pain, fears of side-effects, and addiction) and behavioural factors (variable treatment adherence) can have an impact on the effectiveness of pain medication regimens.⁵

Psychological context

Psychological distress (e.g. depression, anxiety, mood disorders) has long been linked to increased pain in older adults. More recently, there has been growing recognition that cognitive behavioural factors (e.g. pain catastrophizing, pain-related fear) are important in understanding pain and disability in older adults. Pain catastrophizing refers to the tendency to focus on and magnify pain sensations, and to feel helpless in the face of pain.¹⁶ Numerous studies have shown a significant association between pain catastrophizing and increased pain intensity and disability.¹⁷⁻²⁰ Research suggests that pain catastrophizing may have differing impacts in older vs younger individuals. For example, Ruscheweyh and colleagues¹⁹ found that pain catastrophizing was more strongly associated with the affective component of pain (e.g. anger, anxiety, sadness) in younger vs older individuals, but catastrophizing was more strongly associated with the sensory component of pain (e.g. pain intensity) in older individuals. Studies consistently show that pain catastrophizing continues to be a risk factor for depression in older adults.²¹⁻²²

There is evidence that pain catastrophizing is linked to both the biological and social context of pain. For example, in an fMRI study, Seminowicz and Davis²³ found that high catastrophizers exposed to more intense pain showed a diminished ability to engage prefrontal cortical regions that can modulate pain and enable one to disengage from and suppress pain. It also has been proposed that pain catastrophizing may represent a social approach to coping in that it serves to elicit support and attention from others, responses that may in turn contribute to increased pain and disability.¹⁶ We found that cancer patients who engaged in pain catastrophizing indeed reported higher levels of social support; however, they also reported higher levels of pain and poorer quality of life and their partners reported higher levels of caregiver stress.²⁴

Another important psychological variable for older adults is pain-related fear of movement, which refers to an excessive and debilitating fear of physical movement and activity resulting from a feeling of vulnerability to pain.²⁵ Pain-related fear of movement can lead older adults to avoid activity and thus heighten depression and disability.¹⁷ Individuals with a high degree of pain-related fear of movement are also more likely to catastrophize about pain.²⁶ For older adults, pain-related fear of movement and avoidance of activity may be further complicated by fear of falling.²⁷⁻²⁸

Social context

Persistent pain occurs in a social context. Variations in the family, community, work, and healthcare environments can play a role in how older adults adjust to pain. Research suggests that social isolation and socio-economic status are two factors that have an especially important impact on pain and disability in older adults. They often face significant social losses (e.g. deaths of loved ones, loss of social status, loss of independence) and difficulty maintaining social relationships, which can contribute to the exacerbation of persistent pain conditions.²⁶ In turn, persistent pain contributes to greater social isolation, as older adults with chronic pain spend less time in social roles, experience greater restrictions in social and leisure activities, and report less satisfaction with their social role functioning.²⁹⁻³¹ Low socio-economic status (SES) also has a far-reaching impact on health and is associated with accelerated biological ageing.³²⁻³⁴ Individuals in lower SES groups have more chronic pain symptoms and are at greater risk of disabling pain.³⁵⁻³⁸

Psychosocial interventions

Several psychosocial interventions for pain have been empirically tested in older adults: (i) CBT; (ii) emotional disclosure; and (iii) mind-body interventions (Table 1).

Cognitive behavioural therapy

The focus of CBT is helping patients alter pain-relevant thoughts, emotions, and behaviours by training patients in

a variety of skills, including relaxation, distraction, activity pacing, cognitive restructuring, and problem solving. A number of studies have examined CBT interventions for older adults. In one early study, 99 patients (mean age 64) having persistent osteoarthritic knee pain were randomly assigned to one of three conditions: (i) a pain-coping skills training (PCST) protocol based on cognitive behavioural principles; (ii) an arthritis information/education; or (iii) a standard care control.³⁹ Patients in the PCST condition received training in pain-coping skills, including progressive muscle relaxation, imagery, goal setting, activity pacing, identifying and challenging negative thoughts, and problem solving. Those in the arthritis information/education condition received detailed information about their disease and its biomedical management. Results indicated that patients who received PCST showed significant improvements in pain and psychological disability. Those patients who showed increases in their abilities to cope with pain over the course of treatment showed the best short- and long-term improvements in pain, physical disability, and psychological disability.⁴⁰ Subsequent studies of PCST protocols for managing pain in older adults having arthritis pain also support the benefits of this approach.^{41–45} Partner-assisted approaches to PCST have been evaluated in several studies of older adults, and one study focused on teaching partners to guide patients in the use of pain-coping skills to manage cancer pain at the end-of-life.^{42 44 46 47}

Meta-analyses and systematic reviews have been conducted to examine the effects of CBT for a number of pain conditions that often affect older adults (arthritis pain, cancer pain, low back pain, and migraine and tension headache).^{48–52} In general, they show that CBT protocols produce significant decreases in pain (typically, small to medium effect sizes) and significant improvements in indices of adjustment to pain, such as measures of depression, anxiety, pain catastrophizing, self-efficacy, and activity level. Not all studies support the utility of CBT for pain management in older adults, but those with null results often rely on inexperienced or minimally trained therapists, utilize a more didactic/information-based approach, or both to skills training.

Our research group has had extensive experience in using CBT-based approaches with older adults. One of the most important lessons we have learnt is to emphasize experiential

learning in training, as we have found that older adults learn much more readily from such an active training approach than a more didactic approach. A second lesson learnt is the beneficial effects of involving a significant other in the training process, as this approach confers benefits not only to the patient but often to the partner and their relationship.^{42 44 47} In designing CBT for older patients, clinicians should also consider providing rationales, guided practice, and home practice assignments in written and verbal forms and using audio recordings to guide home practice to eliminate the need for memorization.⁵³

Emotional disclosure

Emotional disclosure interventions for pain are based on the premise that patients' inability to experience, identify, express, and process negative emotions can lead to an exacerbation of pain and psychological distress. In emotional disclosure protocols, participants are asked to write or speak for multiple (often 4–6) 15–30 min sessions about their deepest thoughts and feelings related to a stressful experience. In one study, 75 patients (mean age 51) with either rheumatoid arthritis or lupus were randomized to one of three conditions: (i) a traditional emotional disclosure intervention in which they wrote about their thoughts and feelings about their disease; (ii) a benefit-finding disclosure condition in which they wrote about their positive thoughts and feelings about their disease; or (iii) a control condition in which they wrote about disease-related facts.⁵⁴ Results indicated that patients assigned to the traditional emotional disclosure intervention reported lower levels of pain at 1-month post-intervention compared with those in the control condition. Patients in both disclosure conditions reported less fatigue at 3 months compared with the control condition.

Results from the broader literature are mixed.⁵⁵ Among patients with rheumatoid arthritis, one study found that writing about stress led to better physician ratings of disease than control writing, whereas other studies have shown limited benefits or null results.^{55–60} Among patients with fibromyalgia, there have been two controlled studies indicating that emotional disclosure led to benefits in pain and other symptoms.^{61 62} There are some indications that the effects of emotional disclosure may depend on pre-

Table 1. Overview of three psychosocial interventions used in managing pain in older adults

Intervention	Target	Treatment components	Research findings
CBT	Alter pain-relevant thoughts, emotions, and behaviours	Patients attend 6–12 sessions to learn and practice pain-management skills, including relaxation, distraction, activity pacing, cognitive restructuring, problem solving	Good evidence for efficacy
Emotional disclosure	The ability to experience, identify, express, and process negative emotions	Patients write or speak for several 15–20 min sessions about their deepest thoughts and feelings related to a stressful experience	Mixed evidence; efficacy is linked to patient pre-treatment characteristics
Mind-body	Cultivate awareness and acceptance of physical and emotional experiences	Patients attend 6–8 sessions to learn and practice mindfulness meditation, yoga, or both with group discussion of experiences	Few studies, particularly among older adults; preliminary research is promising

treatment characteristics, such as level of anxiety, negative affect, ambivalence over emotional expression, and pain.⁵⁵

Mind–body interventions

There has been growing interest in the use of mind–body interventions [e.g. mindfulness-based stress reduction (MBSR), yoga] for older adults having persistent pain. Results suggest these approaches may be helpful, but the number of randomized studies in older adults is small. One study of older adults having chronic low back pain found that MBSR produced significant improvements in pain acceptance and physical functioning compared with control; however, it had no significant effects on pain or quality-of-life outcomes.⁶³ A study of a chair-based yoga intervention for older adults with osteoarthritis (mean age 80) found that this approach produced significant improvements in physical function but had no effects on pain, stiffness, or depressive symptoms.⁶⁴ Larger, randomized controlled studies are needed to definitively test the effects of such mind–body interventions on pain in older adults.

Clinical implications

Clinicians should be aware that there is growing evidence that psychosocial interventions can help older adults who suffer from persistent pain. Of the three interventions reviewed, the evidence base for CBT in managing pain in older adults is the largest and provides good support for the efficacy of this approach. Emotional disclosure interventions have been tested in a number of studies that included older adults; however, results are mixed. Controlled studies of two of the most common mind–body interventions in older adults (MBSR and yoga) are relatively few in number, making it hard to evaluate their efficacy. Although there are challenges in applying psychosocial interventions for pain in older population (e.g. medical comorbidities, extreme frailty), older adults often have more time available to engage in interventions, have frequent appointments with medical providers during which these interventions can be recommended or provided, and often have access to programmes that teach pain self-management (e.g. arthritis self-management) in community settings.

Future directions

There are several important directions for future work in this area.

Treatment of pain and comorbid conditions

Older adults often experience pain in the context of comorbid conditions such as obesity, depression, diabetes, or cancer. In some cases, comorbid problems that contribute to pain will need to be addressed if the psychosocial pain-management intervention is to be successful. Along these lines, we recently compared the separate and combined effects of pain-coping skills training and a behavioural

weight-management intervention in patients having osteoarthritis pain who were also overweight or obese.⁶⁵ We found that participants who received an intervention that combined both pain-coping skills training and behavioural weight management had much better outcomes when compared with either intervention alone or standard care. Patients in this combined intervention had significant reductions in pain, weight, physical disability, and stiffness with increased activity and self-efficacy. These results strongly suggest that in overweight or obese arthritis patients with pain, it is important to intervene in a way that not only addresses pain but also weight management.

Using other health professionals to deliver treatment

Psychosocial interventions have traditionally been delivered by psychologists. There is growing interest in having these interventions delivered by other healthcare professionals (e.g. nurses, physical therapists), primarily because older adults often have contact with them in the course of their care. A study by Ahles and colleagues⁶⁶ of primary care patients with pain problems tested the effects of a nurse-assisted problem-solving/coping skills protocol compared with usual care. The intervention produced significant reductions in pain and improvements in physical and psychological functioning. Even though nurse involvement was limited (three phone calls), improvements were maintained at 12 months follow-up.

Alternative ways to deliver treatment

A barrier to psychosocial treatments for older adults having mobility problems is that these interventions are typically delivered in a specialist hospital setting. There is growing interest in alternative ways to deliver these treatments, for example via telephone or Internet and mobile health (mHealth) delivery modalities. A number of ongoing studies are testing psychosocial interventions for managing pain in older adults using novel delivery modalities such as face-to-face intervention through video conferencing, use of instant and text messaging, web-based programs, mobile phone conversations, and combinations of these. Such approaches hold the promise of making psychosocial interventions for pain much more widely available to the population of older adults who need them.

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