



The effectiveness of psychological treatments for chronic pain in older adults: cautious optimism and an agenda for research

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Purpose of review

To explore the potential role of psychological treatments for older people who are affected by chronic pain.

Recent findings

It is now widely recognized that chronic pain is a highly prevalent health problem among older people, and guidelines have evolved to assist with the assessment and management of chronic pain. However, despite the fact that psychological treatments have been shown to be effective for a range of other conditions such as depression and anxiety, there is a relative paucity of studies focused on pain management. Although more evidence is needed, the trend from existing studies indicates that older people find psychological treatments for chronic pain to be relevant, acceptable in content, and beneficial in reducing distress and disability. Particular challenges arise for the delivery of psychological interventions to people with pain and cognitive impairment associated with dementia. There is a growing interest in this population and a good deal of research has focused on the assessment of pain, but with a small number of exceptions, almost no research activity as yet in developing psychological treatments for people with pain and dementia.

Summary

We conclude that there is sufficient evidence that psychological interventions are efficacious for older people with chronic pain. We propose a number of areas for research focus over the next 10 years that will help to consolidate our knowledge and to explore new avenues for the psychological management of chronic pain in older people.

Keywords

older adults, psychological, research, treatment

INTRODUCTION

In ways that are reminiscent of the delay in recognizing chronic pain as a problem in children, chronic pain has only recently been acknowledged as a major health problem among people aged over 65 years. In part, this recognition may be related to estimates of age-related changes in the populations of most countries. In the USA, studies suggest that by 2050, 20% of the population will be over 65, compared to 12% in 2008 [1]. Additionally, in most developed countries, the oldest old (80+ years) are the fastest growing group of the aging population [2]. The prevalence of chronic pain has consistently been shown to increase with age, occurring in 30–50% or more of people over 65 versus 15–20% in younger groups [3–6]. There is evidence that the

frequency of pain in those living in nursing homes could be as high as 80% [7]. These statistics indicate that chronic pain in older adults will become a major challenge to those directly affected as well as their communities and healthcare systems.

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KEY POINTS

- Chronic pain is a highly prevalent health problem in older people.
- Psychological treatments have much to offer older people with chronic pain.
- Assessing and managing pain in older people with dementia is a particular challenge.
- We provide a number of recommendations for developing a research agenda in this field.

Mirroring this belated recognition of chronic pain in older adults, there has been a paucity of research on psychological interventions for chronic pain in those over 65 years. This contrasts markedly with the level of research focused on working age adults. Systematic reviews of randomized controlled trials (RCTs) of psychological treatments for chronic pain have found that few studies included those aged over 65 years [8,9]. Indeed, many of the studies reviewed explicitly excluded those aged over 65 years. In view of the looming surge in demand for pain services by older adults, it is timely to take stock of what we know and identify an agenda for clinical research.

OBSTACLES FACING PSYCHOLOGICAL PAIN TREATMENT STUDIES IN OLDER ADULTS

Psychological treatments, especially cognitive-behavioral therapy (CBT), have been shown to help with adjustment to chronic pain in adults [8,9] and have been incorporated into several pain management practice guidelines [10,11]. However, a comprehensive summary of the psychological treatments for chronic pain in older adults highlighted that very few high-quality studies have been conducted with older people [12¹¹]. The question arises as to why there are so few treatment studies in this population. This may be related to a general lack of recognition of chronic pain as a major health issue in older adults, but there may be obstacles to conducting psychological studies peculiar to this age group as well, as outlined here:

- (1) Older adults may be less likely to report pain [13], possibly because of cognitive impairment [14], possibly because of stoicism or a desire not to be a burden on caregivers, or just the belief that pain is a normal consequence of aging [15].
- (2) As comorbidities are common [16¹¹], other health concerns may take priority and pain

may not be reported or may not be a focus of attention.

- (3) Health professionals may be less likely to ask older patients about pain or may opt to manage pain differently in older patients. For example, people over 70 were less likely than younger patients to be recommended physiotherapy, exercise, or to be referred to a pain specialist or for CBT [17].
- (4) In one study, only 3.1% of older adults with lower back pain received CBT; but interestingly, older age groups perceived they would benefit less from CBT, possibly leading to reluctance to participate in such studies [17].
- (5) Pain treatment for the elderly poses particular clinical and research challenges, such as working with those with sensory loss, working with cognitive impairment and with other medical illnesses, and working with those living in residential care settings in which caregivers may not have the time or professional expertise to facilitate pain management treatment programs.
- (6) There may be relevant socio-contextual factors, for example, intervention research efforts in pain management may be targeted more at working age adults because of the priorities associated with return to work goals.

PSYCHOLOGICAL TREATMENTS WORK FOR OTHER CONDITIONS: WHAT ABOUT CHRONIC PAIN?

There is substantial evidence showing that psychological treatments, especially CBT, are effective for other common problems in older people, such as depression [18¹¹], traumatic stress symptoms [19], insomnia [20], bereavement-related difficulties [21], health anxiety [22¹¹], and generalized anxiety [23]. These studies are helpful in indicating that older people can benefit from psychological treatments, but what about the treatment of chronic pain in this age group?

In the context of the aforementioned difficulties that face the evaluation of psychological treatments for chronic pain in older adults, it is possible to discern three major categories of these treatments based on the role or predominance of the psychological intervention:

- (1) Category 1 treatment – the psychological treatment is either the only intervention or the major component within a multidisciplinary approach in which the principal focus is pain self-management (e.g. [16¹¹]).
- (2) Category 2 treatment – the psychological treatment is primarily for comorbid conditions, such

as depression or insomnia. The impact of pain may be ameliorated as a result of treating the comorbid condition, but pain management is not the primary focus (e.g. [24]).

- (3) Category 3 treatment – multi-element treatment programs in which psychological treatment is just one element alongside pharmacological and other physical treatments (e.g. [25^{***}]).

For the sake of clarity, this review will primarily describe category 1 psychological treatments that reflect attempts to address some of the obstacles identified earlier. In practice, category 3 treatment programs frequently have psychological approaches as an integral and central element, but isolating their unique contribution in those cases is complicated. Among the psychological treatments (category 1), CBT-based treatments have the best supporting evidence [12^{**},25^{***}], and there is support for a cognitive-behavioral conceptualization of adjustment to chronic pain in older populations [26,27].

An early study [28] found that CBT, in the form of pain coping skills training, was effective in reducing pain and psychological disability among people in their 60s and 70s with osteoarthritic knee pain. Interestingly, contrary to common expectations, the attendance level was high and so was reported treatment credibility. Cook [29] evaluated a 10-session CBT program with a chronic pain sample of elderly people living in nursing homes. The treatment group reported lower pain and pain-related disability than controls. Again, a high level of attendance (82%) and respectable weekly homework adherence (57%) were reported. This study demonstrated that a ‘hard to reach’ population, that is, very old people living in nursing homes, can benefit from CBT pain management strategies. Ersek *et al.* [30] also found that a sample of elderly residents in retirement communities (mean age 82 years) showed high motivation and attendance at group sessions over 8 weeks and good adherence to prescribed activities. Ersek *et al.* reported some short-term gains in pain levels in the treatment group relative to the controls, but no differences for pain-related disability or depression. Using a self-management treatment manual for older people [31], Green *et al.* [32] reported that CBT participants (mean age 72 years) treated in community or home settings showed improvement in maladaptive pain beliefs and use of relaxation relative to waitlist controls (mean age 77 years), although both groups reported reduced pain.

Despite the support for CBT methods from several RCTs, these results are not uniform. One large study [33] found no benefit, relative to a control condition, for CBT-based self-management

conducted by trained, psychologist-supervised nurses in retirement communities. Although the intervention seemed acceptable to the participants, it is possible the treatment ‘dose’ (10.5 h over 7 weeks) and specifically the cognitive component of treatment in that study may not have been sufficient. More recently, a study using a ‘stronger dose’ (16 h over 4 weeks) found significant benefits for a CBT-based program conducted by an experienced clinical psychologist and physiotherapist relative to two control conditions [16^{**}]. This study involved community-dwelling adults seen in a well established pain management center and therefore requires replication in other settings, but notably only 12% dropped out of the CBT group in the 1-month follow-up – questioning the view that older adults are not interested in such treatments.

In sum, the few RCTs of CBT-based treatments for chronic pain in older adults indicate that these treatments can be acceptable to this age group in a range of settings: they are able to participate in therapy and be reasonably adherent to the self-management strategies taught. Importantly, several studies have shown significant benefits across a range of dimensions [34,35]. Essentially, these findings indicate that further studies of these methods in older adults are warranted.

CONSIDERATIONS IN DESIGNING AND DELIVERING PSYCHOLOGICAL THERAPIES TO OLDER PEOPLE

There are a number of practical considerations when conducting treatment and evaluation studies in this population.

- (1) One major challenge is the increased risk of cognitive impairment in older groups. The risk of cognitive impairment increases substantially with age and there is also a documented impact of pain on cognitive function [35,36] – this is effectively a ‘double jeopardy’ for older people with chronic pain. In severe dementia, patients may be largely uncommunicative, rendering a key information cue inaccessible, but there are now a growing number of studies addressing this complex issue (e.g. [37,38]). Achterberg *et al.* [39^{**}] provide an excellent review of the challenges of assessing and managing pain in people with dementia and note a need to provide better and more accessible pharmacological and behavioral treatments for this population.
- (2) Psychological treatments with people with even mild cognitive impairment require different pacing of delivery, more repetition, more

memory and learning aides, and, possibly, the involvement of a caregiver or spouse (see [12¹¹]). In treating older adults, the importance of behavioral rehearsal of homework tasks and exercises has been emphasized, rather than didactic instructions, for the promotion of home applications [12¹¹].

- (3) Frailty and medical comorbidities are common and there may be an impact of medication on cognitive function and the possibility of side-effects [40].
- (4) In addition to strategies to enhance learning, care must be taken to ensure that the treatment materials are appropriate for an elderly group. This could include larger font sizes and spacing of written material, to underline and highlight the important aspects of written material, and to offer assistance to those with sensory impairment or reduced manual dexterity. Health staff should communicate clearly, avoid use of jargon, and offer to read written material aloud and to record participants' answers if required.
- (5) For treatment evaluation, psychometric measures should be both suitable and relevant to the population [34]. For example, reference to paid employment and playing sports may be irrelevant. Measures should be selected that have been validated and have norms for older people [13]. In very old or frail individuals, some physical function tests may be too demanding and modifications to existing tests may be necessary. Collateral reports can be of benefit in some cases. Recording the presence of comorbid conditions is important, as deterioration over time (e.g. during a follow-up period) may be attributable to a comorbid condition rather than the targeted pain condition.

THE NEXT 10 YEARS: RECOMMENDATIONS FOR RESEARCH AND EVALUATION

- (1) We clearly need more RCTs of CBT and other psychotherapeutic approaches, including treatment programs that fall within each of the three categories of treatment outlined earlier, especially those in which treatment is delivered by nonpsychologists in nursing homes, as a high proportion of residents in nursing homes have chronic pain [7] and access to psychology services may be limited in that environment.
- (2) There is a need to identify the most important ingredients of psychological interventions and the optimal 'dose' of treatment (e.g. therapy duration, pace, quantum, and use of booster sessions) and the optimal configuration of

therapist factors (e.g. age, sex, professional background, experience, and training).

- (3) As yet, little is known about the patient factors that influence outcomes such as cognitive ability, 'psychological mindedness' (the ability to recognize that thoughts mediate emotional and behavioral responses to pain), and the influence of comorbidity and mobility restrictions. We also do not know which older people are at highest risk for pain-related disability – the so-called 'yellow flags' (e.g. [41]) or psychosocial risk factors for pain-related disability may not be the same for all ages and we do not yet know whether older people will respond to targeted interventions.
- (4) Studies should compare the different ways of delivering treatment – although there is evidence that the involvement of spouses can help [42,43], more research is required with older people who do not have a spouse but may have a trusted friend or other family member. Group versus individual therapy should also be evaluated.
- (5) Although older adults are increasingly using the Internet for health reasons [44], the use of e-health and virtual reality technologies is rare with older people with pain. Turner [45¹¹] highlighted the need to enhance patient receptiveness toward, and willingness to fully engage in, psychological treatments. The use of varied delivery modalities may help in this regard.
- (6) Although there are comprehensive clinical practice guidelines for the assessment [46] and management of pain in older adults [25¹¹], evaluation of their translation into better practice by clinicians is urgently required.
- (7) There is evidence that the effect of chronic pain on cognitive and neuropsychological function may be cumulative [47], which raises the intriguing question of whether pain interventions could ameliorate the impact of pain on cognitive function. Researchers should consider looking at cognitive function as one of the outcomes of interest in psychological treatment studies.

CONCLUSION

This review indicates that chronic pain is a prevalent problem for older people; yet, psychological treatments which have been shown to be effective in those aged below 65 have rarely been evaluated with older adults. There is sufficient evidence that older adults may benefit from these treatments to warrant a concerted evaluation and refinement of such treatments with those in the later stages of life.

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Conflicts of interest

The authors have no conflict to declare in relation to this article.

REFERENCES AND RECOMMENDED READING

Papers of particular interest, published within the annual period of review, have been highlighted as:

- of special interest
- of outstanding interest

1. U.S. Department of Health and Human Services. Growing older in America: the health and retirement survey. Washington, DC: National Institute on Aging, National Institutes of Health; 2007. NIH Publication no. 07-5757.
2. Kinsella K, He W. U.S. Census Bureau, International Population Reports, P95/09-1, an aging world: 2008. Washington, DC: U.S. Government Printing Office; 2009.
3. Blyth FM, March LM, Brnabic AJM, *et al.* Chronic pain in Australia: a prevalence study. *Pain* 2001; 89:127–134.
4. Bridges S. Chapter 9: Chronic pain. In: Craig R, Mindell J, editors. Health survey for England 2011: health, social care and lifestyles. Leeds: Health and Social Care Information Centre; 2012.
5. Johannes CB, Le TK, Zhou X, *et al.* The prevalence of chronic pain in United States adults: results of an Internet-based survey. *J Pain* 2010; 11:1230–1239.
6. Raftery M, Murphy AM, Normand C, *et al.* Chronic pain in the Republic of Ireland – community prevalence, psychosocial profile and predictors of pain-related disability: results from the PRIME study, Part 1. *Pain* 2011; 152:1096–1113.
7. Takai Y, Yamamoto-Mitani N, Okamoto Y, *et al.* Literature review of pain prevalence among older residents of nursing homes. *Pain Manag Nurs* 2010; 11:209–223.
8. Eccleston C, Williams ACDC, Morley S. Psychological therapies for the management of chronic pain (excluding headache) in adults. *Cochrane Database Syst Rev* 2009; (2); Art. no.: CD007407. doi: 10.1002/14651858.
9. Williams ACDC, Eccleston C, Morley S. Psychological therapies for the management of chronic pain (excluding headache) in adults. *Cochrane Database Syst Rev* 2012; (11); Art. no.: CD007407. doi: 10.1002/14651858.
10. Airaksinen O, Brox JI, Cedraschi C, *et al.*, COST B13 Working Group on Guidelines for Chronic Low Back Pain. European guidelines for the management of chronic nonspecific low back pain. *Eur Spine J* 2006; 15 (Suppl. 2): S192–S300; Chapter 4.
11. British Pain Society. Recommended guidelines for pain management programmes for adults. A consensus statement prepared on behalf of the British Pain Society. London: British Pain Society; 2007.
12. Keefe FJ, Porter L, Somers T, *et al.* Psychosocial interventions for managing pain in older adults: outcomes and clinical implications. *Br J Anaesth* 2013; 111:89–94.

This paper focuses on the evidence for psychosocial interventions for pain management and is a comprehensive and expert review of the field.

13. White C, Katz B. Australian and New Zealand Society for Geriatric Medicine Position Statement No. 21 (2012). Pain in older people. Available at www.anzsgm.org/posstate.asp. [Retrieved 8 August 2013].
14. Scherder E, Herr KA, Pickering G, *et al.* Pain in dementia. *Pain* 2009; 145:276–278.
15. Gagliese L, Melzack R. Chronic pain in elderly people. *Pain* 1997; 70: 3–14.
16. Nicholas MK, Asghari A, Blyth FM, *et al.* Self-management intervention for chronic pain in older adults: a randomized controlled trial. *Pain* 2013; 154:824–835.

This study was the most rigorous RCT to date and showed evidence for effectiveness of a relatively low-intensity treatment program, providing a useful foundation on which future studies can build.

17. MacFarlane GJ, Beasley M, Jones EA, *et al.* The prevalence and management of low back pain across adulthood: results from a population based cross-sectional survey (the MUSICIAN study). *Pain* 2011; 153:27–32.
18. Gould RL, Coulson MC, Howard RJ. Cognitive behavioral therapy for depression in older people: a meta-analysis and meta-regression of randomized controlled trials. *J Am Geriatr Soc* 2012; 60:1817–1830.

Depression is highly comorbid with chronic pain and this meta-analysis is therefore relevant in summarizing the evidence for psychological treatment of depression in older people.

19. Chan D, Fan MY, Unutzer J. Long-term effectiveness of collaborative depression care in older primary care patients with and without PTSD symptoms. *Int J Geriatr Psychol* 2011; 26:758–764.

20. Irwin MR, Cole JC, Nicassio PM. Comparative meta-analysis of behavioral interventions for insomnia and their efficacy in middle-aged adults and in older adults 55+ years of age. *Health Psychol* 2006; 25:3–14.
21. Acierno R, Rheingold A, Amstadter A, *et al.* Behavioral activation and therapeutic exposure for bereavement in older adults. *Am J Hosp Palliat Med* 2012; 29:13–25.
22. Bourgault-Fagnou MD, Hadjistavropoulos HD. A randomized trial of two forms of cognitive behaviour therapy for an older adult population with subclinical health anxiety. *Cogn Behav Ther* 2013; 42:31–44.

Although not focused on pain per se, this study looked at the related and relevant area of health anxiety and showed evidence for the effectiveness of a CBT program.

23. Goncalves D, Byrne GJ. Interventions for generalized anxiety disorder in older adults: systematic review and meta-analysis. *J Anxiety Disord* 2012; 26:1–11.
24. Lin EHB, Katon W, Von Korff M, *et al.*, for the IMPACT Investigators. Effect of improving depression care on pain and functional outcomes among older adults with arthritis: a randomized controlled trial. *JAMA* 2003; 290:2428–2429.
25. British Geriatrics Society. Guidance on the management of pain in older people. *Age Ageing* 2013; 42:i1–i57.

This comprehensive and informative clinical practice guideline is an excellent resource in the area.

26. Chan S, Hadjistavropoulos T, Nicholas Carleton R, Hadjistavropoulos H. Predicting adjustment to chronic pain in older adults. *Can J Behav Sci* 2012; 44:192–199.
27. Wood BM, Nicholas MK, Blyth F, *et al.* Catastrophizing mediates the relationship between pain intensity and depressed mood in older adults with persistent pain. *J Pain* 2013; 14:149–157.
28. Keefe FJ, Caldwell DS, Williams DA, *et al.* Pain coping skills training in the management of osteoarthritis knee pain: a comparative study. *Behav Ther* 1990; 21:49–62.
29. Cook AJ. Cognitive-behavioural pain management for elderly nursing home residents. *J Gerontol B Psychol Sci* 1998; 53:51–59.
30. Ersek M, Turner JA, McCurry SM, *et al.* Efficacy of self-management group intervention for elderly persons with chronic pain. *Clin J Pain* 2003; 19:156–167.
31. Hadjistavropoulos T, Hadjistavropoulos HD, editors. Pain management for older adults: a self-help guide. Seattle, WA: IASP Press; 2008.
32. Green S, Hadjistavropoulos T, Hadjistavropoulos H, *et al.* A controlled investigation of a cognitive behavioural pain management program for older adults. *Behav Cogn Psychother* 2009; 37:221–226.
33. Ersek M, Turner JA, Cain KC, Kemp CA. Results of a randomized controlled trial to examine the efficacy of a chronic pain self-management group for older adults. *Pain* 2008; 138:29–40.
34. Turk DC, Dworkin RH, Allen RR, *et al.* Core outcome domains for chronic pain clinical trials: IMMEDIATE recommendations. *Pain* 2003; 106:337–345.
35. Moriarty O, McGuire BE, Finn D. The effect of pain and its pharmacological treatment on cognitive function: a review of clinical and preclinical studies. *Prog Neurobiol* 2011; 93:385–404.
36. McGuire BE. Chronic pain and cognitive function. *Pain* 2013; 154:964–965.
37. Herr K. Pain assessment strategies in older patients. *J Pain* 2011; 12 (Suppl. 1):S3–S13.
38. Husebo HS, Achterberg WP, Lobbezoo F, *et al.* Pain in patients with dementia: a review of pain assessment and treatment challenges. *Norsk Epidemiologi* 2012; 22:243–251.
39. Achterberg WP, Pieper MJC, van Dalen-Kok AH, *et al.* Pain management in patients with dementia. *Clin Interv Aging* 2013; 8:1471–1482.

This is a state-of-the-art review regarding the assessment and management of pain in people with dementia. It is one of the few papers that addresses the use of behavioral interventions in this population.

40. Blyth FM, Rochat S, Cumming RG, *et al.* Pain, frailty and comorbidity in older men: The CHAMP study. *Pain* 2008; 140:224–230.
41. Nicholas MK, Linton SJ, Watson PJ, Main CJ. Decade of the Flags' Working Group. Early identification and management of psychological risk factors ('yellow flags') in patients with low back pain: a reappraisal. *Phys Ther* 2011; 91:737–753.
42. Keefe FJ, Caldwell DS, Baucom D, *et al.* Spouse-assisted coping skills training in the management of knee pain in osteoarthritis. *Arthritis Rheum* 1996; 9:279–291.
43. Keefe FJ, Caldwell DS, Baucom D, *et al.* Spouse-assisted coping skills training in the management of knee pain in osteoarthritis: long-term follow-up results. *Arthritis Care Res* 1999; 12:101–111.
44. Crabb RM, Cavanagh K, Proudfoot J, *et al.* Is computerized cognitive-behavioural therapy a treatment option for depression in late-life? A systematic review. *Br J Clin Psychol* 2012; 51:459–464.
45. Turner JA. Research on cognitive-behavioral therapies for older adults with chronic pain: In its infancy, but growing. *Pain* 2013; 154:171–172.

This study provides a very helpful review of the literature on CBT for pain in older people and provides pointers for further research in the area.

46. Hadjistavropoulos T, Herr K, Turk DC, *et al.* An Interdisciplinary Expert Consensus Statement on assessment of pain in older persons. *Clin J Pain* 2007; 23:S1–S43.
47. May A. Chronic pain may change the structure of the brain. *Pain* 2008; 137:7–15.