



Depression is highly prevalent among older adults with chronic pain living both in community and institutional settings. It is associated with decreased quality of life, including impairments in physical and social well-being. This article reviews the relationship between pain and depression. The potential mediating role of disability, life interference, and perceived control are described. Routine assessment of both pain and mood, using scales validated for this age group, is advocated. Finally, the importance of integrating pharmacological and psychological interventions for the management of pain and depression in the older adult is highlighted.

Key words: chronic pain, depression, mood disturbance, assessment, management

Pain and Depression in Aging Individuals

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Many older adults experience persistent pain that interferes with function, affecting an estimated 71% of individuals living independently and 83% of those in institutional settings.¹ Unfortunately, many older adults do not receive adequate treatment for their pain.² Persistent unrelieved pain has detrimental effects on many domains of function, including psychological well-being. Although other types of psychiatric disturbance, such as anxiety disorders, are reported by older adults with chronic pain,³ depression has received the bulk of the empirical attention and will be the focus of this article.

Depression is common among the older population, with 1–3% meeting the diagnostic criteria for Major Depressive Disorder and an additional 8–16% experiencing clinically significant symptoms.⁴ Depression is highly prevalent among people with chronic pain.⁵ There is evidence to suggest some shared neurobiological mechanisms between pain and depression;⁵ however, this research has not considered the neurobiology of aging. Although the temporal relationship between pain and depression requires further study, the majority of the data suggest that depression is most often a consequence of ongoing pain.⁶ It is important to be very clear that the co-occurrence of pain and depression does not mean the pain is caused by psychopathology. All pain, regardless of its cause, is influenced by psychological factors and can have effects on psychological well-being. This is normal and not a sign that the pain is psychogenic or a manifestation

of a psychological disturbance. Importantly, this is true even when it is difficult to identify a medical etiology for the pain.⁷ The possible mechanisms for the relationship between pain and depression span the biopsychosocial spectrum, and include shared neurophysiological, cognitive, environmental, and predispositional factors.⁶

Many older adults with chronic pain experience clinically significant levels of depression.³ The prevalence and intensity of these symptoms do not appear to be age-related.^{8,9} Depressed older adults report more pain than those who are nondepressed,¹⁰ and older adults with chronic pain report more depression than those who are pain free.¹¹ In addition, as the intensity of depressive symptoms increases, pain-related disability, activity restriction, and withdrawal increase.¹² Consistent with this, older adults with pain and depression are likely to report withdrawal from usual activities.¹¹ Importantly, severe pain has been associated with increased risk of suicide, especially in older men.¹³ Taken together, these data suggest that depression enhances suffering due to pain.³

Longitudinal studies have supported the close relationship between pain and depression, reporting that each one increases the risk of developing the other. For instance, in one study, the risk for the onset of depression was three times greater in older adults with pain than in those who were pain-free.¹⁴ This finding was recently replicated by Chou and Chi¹⁵ among older primary care

patients in Hong Kong. In this study, pain at baseline was a significant predictor of depression one year later. This remained significant even after adjusting for social support, disability, and social functioning. The role of depression in the development of pain is less clear; some studies report that depression predicts the onset of pain while others have found no predictive relationship.^{14,15} This issue requires further research. Nonetheless, the data suggest that effective pain control might protect older people with chronic pain from developing significant depressive symptomatology.

As mentioned above, chronic pain and depression are strongly linked in the older population. There is growing evidence that physical disability plays an important role in this relationship. Older adults with chronic pain report more disability and impairment in activities of daily living than pain-free older adults.¹⁶ As symptoms of depression become more severe, pain-related disability and activity interference also increase.¹² Over time, pain is associated with increased emotional distress as well as decreased muscle strength and balance, each of which may contribute to increased activity avoidance.¹⁷ Interestingly, there is evidence that older people with pain and depression are less likely than those without depression to adhere to treatment and rehabilitation strategies.¹² This may further increase the risk of inadequate management and subsequent declines in health status.

The interrelationship of pain, depression, and disability has received some empirical attention. Williamson and Schulz¹⁸ prospectively studied the relationship between cancer pain and depression in younger and older patients. At both baseline and eight-month follow-up, age differences were not found in pain, activity restriction, or distress. Importantly, activity restriction fully mediated the relationship between pain and distress in younger patients but only partially mediated it in older patients. Although these results await

replication, they are similar to results found in patients with chronic nonmalignant pain. Turk *et al.*⁹ reported that the relationship between pain intensity and depression was mediated by perceived life control and pain interference across age groups, but the mediation was greater in younger than older people. Taken together, these results suggest that the role of various biopsychosocial factors in pain and depression may not be the same in younger and older people but that physical disability and attendant activity restriction are important across the adult life span.

Assessment of Pain and Depression

Clinical assessment of chronic pain and depression in the older adult may be difficult because atypical presentation of both may occur. In addition, many of the most common symptoms of depression and consequences of chronic pain, such as sleep and appetite disturbance, may be part of normal aging.³ Importantly, the suspicion of depression does not reduce the necessity of a comprehensive pain assessment, including an evaluation of psychological well-being.

The health care provider should not rely on spontaneous reports of either pain or depression. There are many scales available for the assessment of pain in the older adult. These scales are associated with varying strengths and weaknesses. Overall, it is increasingly recognized that numeric rating scales

are the first choice for the assessment of pain intensity.¹⁹ These scales present a range of numbers, for instance 0–10, with the endpoints labeled “no pain” and “worst pain imaginable.” Patients are instructed to choose the number that best represents their current level of pain. Regular documentation of pain intensity allows for the assessment of change over time, including response to various intervention strategies. In addition to pain intensity, it is important that pain qualities, frequency, onset, distribution, and associated relieving and exacerbating factors are assessed. For detailed assessment recommendations, please see the suggested reading list (Table 1).¹⁹

Depression manifests with many of the same symptoms across the adult lifespan. However, older people may be more likely to present with diminished self-care, increased irritability, and psychomotor retardation.²⁰ It is easy to imagine that this symptom pattern, as well as normal or depression-related memory impairment, may be easily misdiagnosed as mild cognitive impairment.³ Although there have been calls for routine screening of depression in primary care patients,²⁰ this may be particularly important amongst patients with chronic pain. In addition to asking the person about his/her mood, it is recommended that a short self-report screening measure be used to document and follow symptomatology over time.²⁰ Several scales have been validated for the assessment of mood disturbance in the older adult.²⁰ In choosing a

Table 1: Suggested Reading

Detailed Assessment Recommendations

Gagliese L. Assessment of pain in the elderly. In: Turk DC, Melzack R, Eds. Handbook of pain assessment. New York: Guilford Press, 2001;119–33.¹⁹

Scales for the Assessment of Mood Disturbance

Sharp LK, Lipsky MS. Screening for depression across the lifespan: a review of measures for use in primary care settings. *Amer Fam Physician* 2002;66:1001–8.²⁰

AGSA Treatment Guidelines

AGS Panel on Chronic Pain in Older Persons. The management of chronic pain in older persons. *J Amer Geriatr Soc* 1998;46:635–51.²³

Key Points

Studies have supported the close relationship between pain and depression, reporting that one increases the risk of developing the other.

Older depressed adults report more pain than those who are nondepressed.

Depression enhances suffering due to pain; as the intensity of depressive symptoms increases, pain-related disability, activity restriction, and withdrawal increase.

Effective pain control may protect older people with chronic pain from developing depressive symptoms.

Individuals with pain and depression are less likely to adhere to treatment and rehabilitation strategies, thus contributing to further declines in functional status and well-being.

Health care providers should routinely screen for depression in primary care patients reporting chronic pain, using scales validated for use in this age group.

Treatment of depression has been associated with reduced pain, increased physical function, and improved quality of life.

measure, it is important that one validated both for older adults and for those with chronic pain be selected.¹⁹ Please see the reading list (Table 1) for a careful review of the various scales that are available.

Treatment of Pain and Depression

The treatment of pain and depression in older individuals can be complicated and should include both pharmacological and nonpharmacological strategies. There is evidence that treatment of depression, both with antidepressants and psychotherapy, is associated with reduced pain, and increased physical function and quality of life.²¹ Conversely, effective treatment of pain has been associated with improvements in several domains of quality of life, including mood and functional status. Nonetheless, there is evidence that treatment response to antidepressants may be delayed or prolonged in older adults with comorbid pain and depression.²² Despite the prolonged response, however, the available evidence suggests that treating older people with pain and depression can lead to positive outcomes that generalize to improved quality of life.²¹ As such, there is no rea-

son to deny treatment of pain or depression to aging adults.²³

In addition to pharmacotherapy, effective psychological interventions for the management of chronic pain and depression are available for this age group. They have been shown to benefit from cognitive-behavioural therapy²⁴ as well as relaxation and biofeedback training.²⁵ Although more rigorously controlled studies are needed, it appears that older chronic pain patients benefit substantially from psychological interventions, which may be safer than pharmacological interventions in this group. Detailed treatment recommendations are beyond the scope of this article. Interested readers are referred to the treatment guidelines developed by the American Geriatrics Society.²³

Conclusions

As the population ages,²⁶ it will become increasingly important to understand pain and its impact on older adults. There is growing evidence that pain that interferes with function is not a normal part of aging and may have profound effects on psychological well-being and quality of life. Therefore, it is important that

assessment of pain and mood become routine parts of primary care for aging adults. Further research is needed to better understand the relationship between pain and depression and to identify the most appropriate treatment protocol for older people with chronic pain and depression.



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References

1. Helme RD, Gibson SJ. The epidemiology of pain in elderly people. *Clin Geriatr Med* 2001;17:417-31.
2. Pahor M, Guralnik JM, Wan JY, et al. Lower body osteoarticular pain and dose of analgesic medications in older disabled women: the women's health and aging study. *Am J Public Health* 1999;89:930-4.
3. Parmelee PA. Pain and psychological function in late life. In: Lomranz J, Mostofsky DJ, Eds. *Handbook of Pain and Aging*. New York: Plenum Press, 1997;207-26.
4. Cole MG, Dendukuri N. Risk factors for depression among elderly community subjects: a systematic review and meta-analysis. *Am J Psychiatry* 2003;160:1147-56.
5. Fishbain DA, Cutler RB, Rosomoff HL, et al. Chronic pain-associated depression: antecedent or consequence of chronic pain? *Clin J Pain* 1997;13:116-37.
6. Craig K. Emotions and psychobiology. In: Wall P, Melzack R, Eds. *Textbook of Pain*. Edinburgh: Churchill Livingstone, 1999;331-44.
7. Gagliese L, Katz J. Medically unexplained pain is not caused by psychopathology. *Pain Res and Manage* 2000;5:251-7.
8. Gagliese L, Melzack R. Age-related differences in the qualities but not the intensity of chronic pain. *Pain* 2003;104:597-608.
9. Turk DC, Okifuji A, Scharff L. Chronic pain and depression: role of perceived impact and perceived control in different age cohorts. *Pain* 1995;61:93-101.
10. Casten RJ, Parmelee PA, Kleban MH, et al. The relationships among anxiety, depression, and pain in a geriatric institutionalized sample. *Pain* 1995;61:271-6.
11. Landi F, Onder G, Cesari M, et al. Pain and its relation to depressive symptoms in frail older people living in the community: an observational study. *J Pain Symptom Manage* 2005;29:255-62.
12. Reid MC, Williams CS, Gill TM. The relationship between psychological factors and disabling musculoskeletal pain in

Pain and Depression

- community-dwelling older persons. *J Amer Ger Soc* 2003;51:1092–8.
13. Juurlink DN, Herrmann N, Szalai JP, et al. Medical illness and the risk of suicide in the elderly. *Arch Int Med* 2004;164:1179–84.
 14. Geerlings SW, Twisk JWR, Beekman ATF, et al. Longitudinal relationship between pain and depression in older adults: sex, age and physical disability. *Soc Psychiatry Psychiatric Epidemiol* 2002;37:23–30.
 15. Chou KL, Chi I. Reciprocal relationship between pain and depression in elderly Chinese primary care patients. *Int J Geriatric Psychiatry* 2005;20:945–52.
 16. Scudds RJ, Robertson JM. Pain factors associated with physical disability in a sample of community-dwelling senior citizens. *J Gerontology, Series A* 2000;55:M393–9.
 17. Messier SP, Glasser JL, Ettinger WH, et al. Declines in strength and balance in older adults with chronic knee pain: a 30-month longitudinal, observational study. *Arthritis Rheumatism* 2002;47:141–8.
 18. Williamson GM, Schulz R. Activity restriction mediates the association between pain and depressed affect: a study of younger and older adult cancer patients. *Psychol Aging* 1995;10:369–78.
 19. Gagliese L. Assessment of pain in the elderly. In: Turk DC, Melzack R, Eds. *Handbook of pain assessment*. New York: Guilford Press, 2001;119–33.
 20. Sharp LK, Lipsky MS. Screening for depression across the lifespan: a review of measures for use in primary care settings. *Amer Fam Physician* 2002;66:1001–8.
 21. Lin EH, Katon W, Von Korff M, et al. Effect of improving depression care on pain and functional outcomes among older adults with arthritis: a randomized controlled trial. *JAMA* 2003;290:2428–9.
 22. Karp JF, Scott J, Houck P, et al. Pain predicts longer time to remission during treatment of recurrent depression. *J Clin Psychiatry* 2005; 66:591–7.
 23. AGS Panel on Chronic Pain in Older Persons. The management of chronic pain in older persons. *J Amer Geriatrics Soc* 1998;46:635–51.
 24. Puder RS. Age analysis of cognitive-behavioral group therapy for chronic pain outpatients. *Psychol Aging* 1988;3:204–7.
 25. Nicholson NL, Blanchard EB. A controlled evaluation of behavioral treatment of chronic headache in the elderly. *Behav Ther* 1993;24:395–408.
 26. Statistics Canada. *Cohort Flow and the Consequences of Population Ageing, An International Analysis and Review.*, Vol. 89-569-XCB. Ottawa: Government of Canada, 1999.