



Persistent pain is common in older adults, and its consequences are often severe. Self-assessment scales have been validated in older populations and remain the gold standard for the evaluation of pain intensity in this age group. Most patients with dementia demonstrate appropriate use of self-assessment scales.

Observational scales correlate moderately with self-assessment and tend to underestimate pain intensity; thus, their use should be reserved for patients who have demonstrated their inability to use self-assessment tools reliably.

Key words: pain, dementia, self-assessment, pain scale, cognitive impairment

Assessing Pain Intensity in Older Adults

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Introduction

Between 50 and 86 percent of older adults report some degree of pain that may interfere with quality of life.¹⁻³ Musculoskeletal pain is the most frequent pain complaint among older patients, but other sources such as headache, cancer, or postherpetic neuralgia are also common.⁴ Untreated pain can cause secondary symptoms of sleep disturbance, weight loss, depression, and decreased life satisfaction. Older individuals may refrain from complaining of pain because they may believe it is an expected consequence of aging and disease, because they fear the meaning of pain, or because they just don't want to bother anyone.⁵ Furthermore, several studies have demonstrated that pain in older adults may be poorly controlled because they underreport pain.^{6,7} In older individuals with dementia, communication and comprehension difficulties lead to even poorer pain detection and control. Although multiple pain assessment instruments are currently available, most clinicians are not familiar with their performance in older individuals, particularly in the presence of dementia. This paper will review the reliability and validity of self-assessment and observational pain scales in older populations with and without dementia.

Self-Assessment Pain Scales: Are they Reliable in Older Individuals?

Pain is a subjective experience for which there are no objective biological markers. Self-report is considered the most accu-

rate and appropriate pain assessment method as family members and caregivers often underestimate a patient's pain.⁸⁻¹⁰ Patients should be asked to rate their pain both to better understand its severity as well as to give a baseline assessment to determine changes in the level of pain after treatment.

Different unidimensional pain self-assessment scales are available. The horizontal visual analog scale (HVAS) consists of a 10 cm line anchored by two extremes of pain: no pain and extreme pain (Figure 1). Patients are asked to position a sliding vertical marker to indicate the level of pain they are currently experiencing; pain severity is measured as the distance in centimetres between the zero position and the marked spot.¹¹⁻¹³ The vertical visual analog scale (VVAS) is similar to the prior scale but is presented vertically, and the line is replaced by a red triangle with its summit facing downwards (no pain=0) and its base at the top (maximum pain=10); the use of this scale has been validated in children.¹⁴ The faces pain scale (FPS) shown in Figure 2 consists of a line drawing of seven faces that express increasing pain (no pain=0, maximum pain=6).¹⁵ It has been adapted for older adult populations from similar pain scales used in pediatric settings.¹⁶

The verbal rating scale (VRS) originated by Melzack is a simple, commonly used pain rating scale.¹⁷ To complete it, subjects select one of six descriptors that represent pain of progressive intensity: none, mild, discomforting, distressing, horrible, or excruciating. Another

Table 1: Unidimensional Pain Self-Assessment Scales

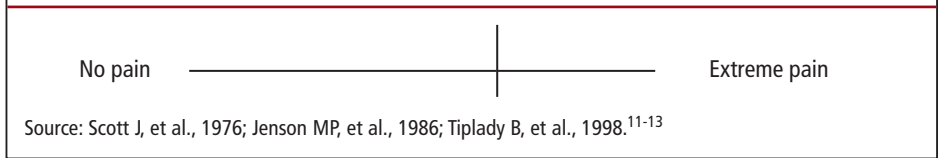
Verbal rating scale
1. no pain
2. mild
3. moderate
4. severe
5. very severe
6. extreme

Source: Melzack R, 1975.¹⁷

scale is a modified 21-point Box Scale. The scale has a row of 21 boxes labeled from 0 to 100 in increments of five. The 0 anchor is labeled "no pain," while the 100 anchor is labeled "pain as bad as it could be." To complete the scale, respondents indicate the box that best represents their pain.¹⁸

Unfortunately, few studies have explored the psychometric properties of unidimensional pain scales in older populations. Kamel demonstrated in a study conducted in two long-term care facilities that the systematic use of three pain assessment scales (the visual analog scale, faces scale, and pain descriptive scale) increased the detection of pain among residents (30% versus 15%, $p < 0.001$).¹⁹ Tiplady *et al.* determined the psychometric properties and utility of five pain rating scales (vertical visual analog scale, 21-point numeric rating scale, verbal descriptor scale, 11-point verbal numeric rating scale, and faces pain scale) in younger (25–55 years) and older (65–94 years) volunteers during experimentally induced thermal pain.²⁰ All five pain scales were effective in discriminating different levels of pain sensation in older adults; the verbal descriptor scale was the most sensitive and reliable. The faces pain scale was less strongly related to other pain scales, perhaps because this pain scale may relate to a broader concept of pain and suffering beyond simple pain intensity. Increasing age has been associated with

Figure 1: Horizontal Visual Analog Scale



a higher frequency of incorrect responses to the VAS.¹⁸ However, Herr, in a sample of community-dwelling older adults, found that the error rate in the use of several different measures of pain intensity was comparable to that reported in the general population by Jensen.^{18,21} In hospitalized older populations, the validity of four pain scales (five-point verbal rating scale, a seven-point faces pain scale, a horizontal 21-point [0–100] box scale, and two vertical 21-point [0–20] box scales) has been demonstrated.²¹

Patients with Cognitive Impairment: Should One Routinely Use Observational Scales?

Pain may be particularly difficult to identify in cognitively impaired individuals as it can manifest itself atypically as agitation, increased confusion, and decreased mobility.³ In many clinical settings, pain is not assessed in demented patients due to reliability concerns. In particular, self-assessment is rarely attempted. Furthermore, when pain is evaluated in severely demented patients, observational scales are routinely used by the nursing staff.^{22,26}

Most of these instruments assess vocalizations, facial expressions, and body language.

However, it should be noted that several studies have demonstrated that patients with dementia can accurately complete self-assessment pain scales and that their reports of pain should be taken seriously. The feasibility and reliability of four pain self-assessment scales (verbal rating, horizontal visual analog, vertical visual analog, and faces pain scales) was evaluated in older hospitalized patients with mild ($n=64$), moderate ($n=81$), and severe ($n=15$) dementia and their performance was compared to that of an observational rating scale. Over 90% of patients with mild-to-moderate dementia and more than one-third of those with severe dementia could complete at least one of four pain self assessment scales. Test-retest reliability was high for all four self-assessment scales, and the correlation between these scales was very strong (Spearman $r_s=0.81-0.95$; $p < 0.001$).²⁷ In contrast, correlation with an observational scale, Doloplus-2[®],^{23,24} which assesses somatic complaints (such as facial expression, protective body posture, or sleep pattern), func-

Table 2: Some Principles of Pain Assessment for Older Patients

Persistent pain is very frequent in older adults and may have important consequences on health, behaviour, and quality of life.
Older individuals frequently underreport their pain.
Self-assessment tools are the gold standard for pain measurement and have been validated in older adults.
Self-assessment scales can be used reliably in most subjects with dementia.
Observational pain scales usually underestimate pain; however, they do correlate moderately with self-assessment. Such scales should not be applied routinely, and their use should be restricted to situations where appropriate self-assessment cannot be performed.

Figure 2: Faces Pain Scale



Source: Tiplady B, et al., 1998.¹³

tional impairment, and psychosocial reactions, was only moderate and tended to underestimate pain intensity.

Conclusion

Pain assessment can be performed in a reliable fashion in older individuals. Validated clinical tools are available. Assistive listening devices or visual scales can be used to facilitate pain assessment in patients with hearing loss. Patients with poor vision should be encouraged to express their pain using either a numerical or verbal scale. Self-assessment scales can be used reliably in most patients with mild and moderate cognitive impairment. Observational scales should not be applied routinely in this population but reserved for those few patients who have demonstrated their inability to use self-assessment scales appropriately. Using the same scale over time is the best approach to tracking changes reliably. It is important to take the time to find the most appropriate scale for each patient and ensure that it is understood.



No competing financial interests declared.

References

- Blyth FM, March LM, Brnabic AJ, et al. Chronic pain in Australia: a prevalence study. *Pain* 2001;89:127-34.
- Mantyselka P, Kumpusalo E, Ahonen R, et al. Patients' versus general practitioners' assessments of pain intensity in primary care patients with non-cancer pain. *Br J Gen Pract* 2001;51:995-7.
- Ferrell BA. Pain evaluation and management in the nursing home. *Ann Intern Med* 1995;123:681-7.
- Sorkin BA, Rudy TE, Hanlon RB, et al. Chronic pain in old and young patients: differences appear less important than similarities. *J Gerontol* 1990;45:P64-8.
- Ferrell BA, Ferrell BR, Osterweil D. Pain in the nursing home. *J Amer Geriatrics Soc* 1990;38:409-14.
- Von Roenn JH, Cleeland CS, Gonin R, et al. Physician attitudes and practice in cancer pain management: a survey from the Eastern Cooperative Oncology Group. *Ann Intern Med* 1993;119:121-6.
- Hitchcock LS, Ferrell BR, McCaffery M. The experience of chronic nonmalignant pain. *J Pain Symptom Manage* 1994;9:312-8.
- Max MB, Payne R, Edwards WT, et al. Principles of Analgesic Drug Use in the Treatment of Acute Pain and Cancer Pain, 4th ed. Glenville, IL: American Pain Society, 1999.
- Nekolaichuk CL, Bruera E, Spachynski K, et al. A comparison of patient and proxy symptom assessments in advanced cancer patients. *Palliat Med* 1999;13:311-23.
- Pautex S, Berger A, Chatelain C, et al. Symptom assessment in elderly cancer patients receiving palliative care. *Crit Rev Oncol Hematol* 2003;47:281-6.
- Scott J, Huskisson EC. Graphic representation of pain. *Pain* 1976;2:175-84.
- Jensen MP, Karoly P, Braver S. The measurement of clinical pain intensity: a comparison of six methods. *Pain* 1986;27:117-26.
- Tiplady B, Jackson SH, Maskrey VM, et al. Validity and sensitivity of visual analogue scales in young and older healthy subjects. *Age Ageing* 1998;27:63-6.
- McGrath PA, Seifert CE, Speechley KN, et al. A new analogue scale for assessing children's pain: an initial validation study. *Pain* 1996;64:435-43.
- Bieri D, Reeve RA, Champion GD, et al. The Faces Pain Scale for the self-assessment of the severity of pain experienced by children: development, initial validation, and preliminary investigation for ratio scale properties. *Pain* 1990;41:139-50.
- Herr KA, Mobily PR, Kohout FJ, et al. Evaluation of the Faces Pain Scale for use with the elderly. *Clin J Pain* 1998;14:29-38.
- Melzack R. The McGill pain questionnaire: major properties and scoring methods. *Pain* 1975;1:277-99.
- Jensen MP, Miller L, Fisher LD. Assessment of pain during medical procedures: a comparison of three scales. *Clin J Pain* 1998;14:343-9.
- Kamel HK, Phlavan M, Malekgoudarzi B, et al. Utilizing pain assessment scales increases the frequency of diagnosing pain among elderly nursing home residents. *J Pain Symptom Manage* 2001;21:450-5.
- Tiplady B, Jackson SH, Maskrey VM, et al. Validity and sensitivity of visual analogue scales in young and older healthy subjects. *Age Ageing* 1998;27:63-6.
- Herr KA, Mobily PR. Comparison of selected pain assessment tools for use with the elderly. *Appl Nurs Res* 1993;6:39-46.
- Hurley AC, Volicer BJ, Hanrahan PA, et al. Assessment of discomfort in advanced Alzheimer's patients. *Res Nurs Health* 1992;15:369-72.
- Lefebvre-Chapiro S, Collectif DOLOPLUS. The Doloplus scale—evaluating pain in the elderly. *Europ J Palliat Care* 2001;8:191-3.
- Wary B. Doloplus-2, une échelle pour évaluer la douleur. *Soins gériatrie* 1999;19:25-7.
- Warden V, Hurley AC, Volicer L. Development and psychometric evaluation of the Pain Assessment in Advanced Dementia (PAINAD) scale. *J Am Med Dir Assoc* 2003;4:9-15.
- Villanueva MR, Smith TL, Erickson JS, et al. Pain assessment for the dementing elderly (PADE): reliability and validity of a new measure. *J Am Med Dir Assoc* 2003;4:1-8.
- Pautex S, Herrmann F, Le Lous P, et al. Feasibility and reliability of four pain self-assessment scales and correlation with an observational rating scale in hospitalized elderly demented patients. *J Gerontol A Biol Sci Med Sci* 2005;60:524-9.