

GUIDELINES

The Assessment of Pain in Older People: UK National Guidelines

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Executive summary

We are facing a huge increase in the older population over the next 30 years. This brings an anticipated increase in the prevalence of chronic pain and with this comes the challenge of assessment of pain in many varied settings. Our first iteration of this document was published in 2007. But there has been a proliferation of literature and research since then, so we have developed a new set of guidelines.

- (1) Different patterns and sites of pain were seen in men and women.
- (2) Age differences suggest that pain prevalence increased with age up to 85 years and then decreased.
- (3) The available studies on barriers and attitudes to pain management point towards an adherence to bio-medically orientated beliefs about pain, concern amongst clinicians in relation to activity recommendations, and a negative orientation in general towards patients with chronic painful conditions.
- (4) A multidisciplinary approach to the assessment and treatment of pain is essential, but the assessment is a complex process which is hampered by many communication issues, including cognitive ability and socio-cultural factors. Such issues are part of the UK ageing population.
- (5) Structured pain education should be implemented that provides all health professionals (whether professionally or non-professionally trained) with standardised education and training in the assessment and management of pain according to level of experience.
- (6) Although subjective, patient self-report is the most valid and reliable indicator of pain and it may be necessary to ask questions about pain in different ways in order to elicit a response.
- (7) A number of valid and reliable self-report measures are available and can be used even when moderate dementia exists. The Numerical Rating Scale or verbal descriptors

can be used with people who have mild to moderate cognitive impairment. For people with severe cognitive impairment Pain in Advanced Dementia (PAINAD) and Doloplus-2 are recommended.

- (8) PAINAD and Doloplus-2 scales continue to show positive results in terms of reliability and validity. There has been no recent evaluation of the Abbey pain scale although it is widely used throughout the UK.
- (9) There is a need for more research into pain assessment using the collaborative role of the multidisciplinary team in all care settings.
- (10) Self-report questionnaires of function are limited in their ability to capture the fluctuations in capacity and ability. The concentration on items of relevance to the population of interest means that issues of personal relevance can be obscured.
- (11) Strong associations were seen between pain and depressed mood with each being a risk factor for the other. Additionally, loneliness and social isolation were associated with an increased risk of pain.
- (12) Clinicians should be cognisant that social isolation and or depressive signs and symptoms may be indicators of pre-existing pain or a predictor of future pain onset.
- (13) There are a number of evidence based guidelines on pain assessment in older people with or without cognitive impairment from around the world, including Australia and Europe.

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Members of the group have registered all competing interests as follows:

Aza Abdulla, Gary Bellamy, Sonia Cottom, Jonathon Davies, Rachael Docking, Anneyce Knight and Denis Martin have reported that they have no conflicts of interest.

Karin Cannons has declared that she is a member of the editorial board of the British Journal of Pain, and has received honoraria as an advisor and speaker to Napp Pharmaceuticals, White Pharmacy, Dallas Burston Ashbourne, Grunenthal, Smiths Medical and Pfizer.

Felicia Cox has declared that she is a Co-Editor of *The British Journal of Pain*, has acted as Editor for e-learning modules

and professional publications for Napp Pharmaceuticals, has co-authored e-learning modules for King's College London, and has received honoraria as an advisor and speaker to Napp Pharmaceuticals, Grunenthal, Cephalon, Dallas Burston Ashbourne and Pfizer.

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Timetable

Dissemination; These guidelines will be distributed to all stakeholders as described in the *Publication Process Manual* [1] and as an electronic version available for download from the British Pain Society and British Geriatrics Society websites. An executive summary of these guidelines will be published in *Age & Ageing*.

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Foreword from Prof Pat Schofield

This guidance highlights the problems in assessing and managing pain in an ever increasing older population. The prevalence of pain has been established to be in the order of one in four of the adult population, with between 25–30% having pain that leads to other co-morbidities, resulting in a very poor quality of life.

These problems become more frequent with advancing years, and are often associated with difficulty in conveying the intensity and quality of the pain, as well as the impact that it has on the patient's life. As we describe pain as the 'fifth vital sign' a fundamental principal underpinning this is that we should measure the pain alongside routine observations.

Just because someone does not have the ability to tell us that they have pain in a language that we can understand, does not mean that we should not measure it, as we would with any other adult or patient in our care.

These guidelines provide a range of tools which demonstrate good validity and reliability for clinical practice in assessing pain in older people. There is permission to use them and so they should be implemented from this formal documentation by all healthcare providers in every care setting across the UK.

Dr Eileen Burns, President, British Geriatrics Society

Older people often live with pain, and in many cases, its management is imperfect. Pain is frequently an especially important issue for very frail older people, including those living in care homes, and people living with dementia frequently experience pain which they find difficult to express. Hence pain and its management is a hugely important issue for older people.

In 2007 we published the first national pain assessment guidelines which was a collaboration between the British Pain Society and the British Geriatrics Society. This document is a new version of the guidance and has taken a thorough and systematic approach to reviewing the literature which has been read and graded by a group of experts representing both societies; clinical practice and academia have been combined thereby ensuring a high quality and up-to-date best evidence document which can be used to guide practice and future research. This is a timely document and the guidance therein will be welcomed by practitioners around the UK.

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I. Glossary of terms

AD	Alzheimer's disease
Ax	Assessment
BME	Black and minority ethnic groups
BP	Back pain
CBP	Chronic back pain
CBT	Cognitive behavioural therapy
CP	Chronic pain
F	Female
Hx	History
LBP	Low back pain
M	Male
NP	Neck pain
OA	Older adult
PD	Parkinson's disease
PTSD	Post traumatic stress disorder
SD	Standard deviation
VAS	Visual analogue scale
XS	Cross sectional
Yr	Years
Acute pain	A temporary pain, time limited situation with attainable relief
Adjuvant medication	Describes any drug that has a primary indication other than pain but has been found to have analgesic qualities
Behavioural indicators	Behaviour changes that can be used to assess pain and distress, and thereby evaluate the efficacy of interventions
Break-through pain	A transient, moderate to severe pain that increases above the pain addressed by the ongoing analgesics
Graded Chronic Pain Scale (GCPS)	A seven item tool that measures facial pain intensity and associated disability

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Neuropathic pain	Pain initiated or caused by a primary lesion or dysfunction in the peripheral or central nervous system	Centre for Epidemiological Studies Depression scale (CES-D) A screening test for depression
Ontological	The philosophical study of the nature of being, becoming, existence or reality, as well as the basic categories of being and their relations	Checklist of Non-verbal Pain Indicators (CNPI) A summation score of pain behaviours at rest and on movement
Pain descriptive tools	Tools that use a numeric or set of words to assess the nature of pain (pattern, nature and intensity)	Clinical Dementia Rating scale (CDR) A tool that stages the severity of dementia
Persistent pain	Pain that lasts a month or more beyond the usual expected recovery period or illness, or goes on for years (non-malignant)	Colour Analogue Score (CAS) A vertical numerical pain rating scale ruler with slide
Self-rated disability	A patient related report of health, function and disability	Colour Pain Analogue Scale (CPAS for pain intensity) A wedge shaped coloured vertical numerical pain rating scale anchored by descriptors with a slider marker
Titration	The gradual increase/decrease of medication to reduce or eliminate pain while allowing the body to accommodate the side effects or toxicity [2].	Coping Strategies Questionnaire (CSQ) A measure of coping in chronic pain patients
		Depression and Anxiety Stress Scale (DASS) Measures negative emotional states of depression, anxiety and stress
		Depression rating scale (DRS) Rating scale for depression
		Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) Criteria for psychiatric diagnoses, including major depression
		Discomfort Scale Dementia of Alzheimer Type (DS-DAT) A nine item behavioural tool for assessing discomfort in patients with Alzheimer type dementia
		Distress checklist A coping checklist for patients and carers to identify if professional support is required to aid coping
		Doloplus (2) tool Used for behavioural pain assessment in elderly with verbal communication problems. It has specifically been designed for patients with mild or moderate cognitive impairment
		Douleur Neuropathique en Quatre Questions (DN4) A screening tool for neuropathic pain consisting of interview questions (DN4-interview) and physical tests
		Echelle Comportementale pour Personnes Agées (ECPA) A French behavioural scale for communicative and non-communicative elderly. The version for non-communicative patients consists of 11 items divided into two periods of observation: before care and during care
		Enrich Social Support Instrument (ESSI) A seven item instrument used to assess the four defining attributes of social support: emotional, instrumental, informational, and appraisal
		EuroQoL (EQ-5D) A generic self-complete measure that is used to measure health outcome
		Face, Legs, Activity, Cry, Consolability scale (FLACC) This five item scale was designed for use in children from two months to seven years
		Facial Grimace Scale (FGS) Scores the level of pain between 0 and 10 as assessed by the caregiver observing the facial expressions of the resident
		Faces Pain Scale (FPS) The original self-report measure using seven facial images (see FPS-R)
		Faces Pain Scale - Revised (FPS-R) A self-report measure of pain intensity developed for children but

2. Glossary of scales

Abbey Pain Scale An observational tool for measurement of pain in people with dementia who cannot verbalise

Anxiety and Sensitivity Index (ASI) An 18 item scale containing items specifying different concerns someone could have regarding their anxiety

Assessment of Discomfort in Dementia protocol (ADD) A tool for nurses to make a differential assessment of physical pain and affective discomfort experienced by people with dementia

Barthel Index Consists of 10 items that measure a person's daily functioning, specifically the activities of daily living and mobility

Behavioural indicators Behaviour changes that can be used to assess pain and distress, and thereby to evaluate the efficacy of interventions

Brief Pain Inventory (BPI) A tool used to assess the severity of pain and the impact of pain on daily functions

Behavioural Rating Scale (BRS-6) A six point behavioural rating scale

Bolton Pain Assessment Tool (BPAT) A behavioural observation tool based on PAINAD and the Abbey Pain Scale

Brief Symptoms Inventory (BSI) A multidimensional measure of psychological and somatic distress that is used to obtain detailed symptom profiles

BS-11 (11 Point Box Scale) An 11 point self-report box scale for pain

BS-21 (21 Point Box Scale) A 21 point self-report box scale for pain

Cambridge Assessment for Mental Disorders of the Elderly Examination (CAMDEX) A comprehensive assessment tool for diagnosing dementia in older people

revised to offer the chance to provide metric scores against six facial images (0–10). A variety of versions are available

Functional Activity Scale (FAS) A simple three-level ranked categorical score designed to be applied at the point of care to measure the functional impact of pain

Functional Pain Scale (FPS) An instrument that incorporates both subjective and objective components to assess pain

Geriatric Depression Scale (GDS) A screening test for depressive symptoms in older adults

Geriatric Pain Measure (GPM) A pain measure for older adults

Geriatric Depression Scale (GDS) The short form is a 15 item instrument which can be used in patients with mild to moderate cognitive impairment

Gracely Box Scale (GBS) Pain intensity and unpleasantness are measured directly by presenting adjectives that are scaled along these separate dimensions of pain. Respondents are instructed to focus on the words to determine their level of pain intensity or unpleasantness and then select the number that corresponds to this level

Guillain-Barre Syndrome (GBS) A rare but serious condition of the peripheral nervous system which causes muscle weakness

Horizontal Visual Analogue Scale (HVAS) tool to rate the intensity of pain on a scale between 0 and 10

Hospital Anxiety and Depression Scale (HADS) A 14 item scale that measures anxiety and depression

Insomnia Severity Index (ISI) A seven question self-administered severity tool that assesses insomnia over the last two weeks

Instrumental Activities of Daily Living (IADL) A measure of daily functioning

Inter Rating Long Term Care Facilities standardised questionnaire (interRAI LTCF) Enables comprehensive, standardized evaluation of the needs, strengths, and preferences

Inventory of Socially Supportive Behaviours (ISSB) Measures received social support

Iowa Pain Thermometer (IPT) A 13 point vertical numerical scale with descriptors, for use with patients with moderate to severe cognitive deficits

Life Satisfaction Inventory (LSI-Z) Measures the level of satisfaction with life

McGill Pain Questionnaire (MPQ) A self-report questionnaire that explores the qualities, pattern and intensity of a patient's pain. A variety of versions are available

McGill Present Pain Intensity (MPQ-PPI) A numerical measure of pain contained within the MPQ

McGill Pain Questionnaire Number of Words Chosen (MPQ-NWC) A measure of the number of words chosen from the sensory, affective and evaluative categories of the McGill Pain Questionnaire

M.D. Anderson Symptom Inventory assessment (M.D. ASI) Assesses symptoms and their interference with daily functioning

Mechanical VAS A tool that measures pain intensity using a slide and ruler

Memorial Symptom Assessment Scale/Card (MSAS) A self-report instrument developed to provide multidimensional information about a diverse group of common symptoms

Mini Mental Stat Examination (MMSE) A tool that uses a series of questions and tests to help diagnose dementia and disease progression

Minimum Data Set (MDS) A comprehensive functional assessment for identifying pain in cognitively impaired older adults in US nursing homes

Mobilization Observation Behaviour Intensity Dementia (MOBID) An observational tool for use in early morning by carers to assess pain behaviours on five movements

Modification of Geriatric Pain Measure (GPM-M2) A geriatric pain measure

Multidimensional Health Locus of Control (MHLC) A set of three locus of control measurement scales, two general and one specifically for patients with an existing health or medical condition

Multidimensional Pain Inventory (MPI-DLV) Dutch language version

Multidimensional Pain Inventory (MPI) A self-report instrument that measures the impact of pain on an individual's life

Nottingham Health Profile (NHP) A generic quality of life survey used to measure subjective physical, emotional and social aspects of health. Part one surveys pain

Numerical Rating Scale (NRS) A tool to rate the intensity of pain on a scale between 0 and 10

Older American Resources and Services ADL (OARS ADL) An assessment of physical function

Pain Anxiety Symptom Scale (PASS) Measures fear and anxiety responses specific to pain. A variety of versions is available

Pain Assessment in Advanced Dementia (PAINAD) Scale This scale for patients with advanced dementia is derived from the DS-DAT and FLACC tools. It includes five items: breathing, negative vocalization, facial expression, body language and consolability

Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) Used to assess pain in patients/residents who have dementia and are unable to communicate verbally

Pain Assessment in Dementing Elderly (PADE) A 24 item checklist for use in long term care facilities

Pain Assessment in Non-communicative Elderly persons (PAINE) A behavioural assessment tool for chronic pain in advanced dementia

Pain Assessment Tool in Confused Older Adults (PATCOA) An ordinal scale of nine items of non-verbal cues for pain rated as absent or present

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Pain Behaviour Measure A tool that can be delivered in 'real time' during a standardised functional assessment to give immediate feedback to clinicians and that could be used as an outcome measure

Pain Impairment Relationship Scale (PAIRS) A tool developed to assess the extent to which chronic pain patients believe that they cannot function normally because of their pain, and the relationship of this belief to functional impairment

Pain-O-Meter Visual Analogue Scale (POM-VAS) – A plastic tool that measures $8 \times 2 \times$ one inches. Two pain tools are located on the POM: a 10 cm visual analogue scale (POM-VAS) with a moveable marker, and a list of 15 sensory and 11 affective word descriptors

Pain Rating Index (PRI) A measure of pain

Pain Rating Index affective (MPQ-PRIa) The score from the affective section of the McGill Pain Questionnaire

Pain Rating Index mixed (MPQ-PRI_m) The score from the mixed section of the McGill Pain Questionnaire

Pain Rating Index somatosensory (MPQ-PRI_s) The score from the somatosensory section of the McGill Pain Questionnaire

Pain Thermometer A pictorial coloured pain intensity scale with a vertical thermometer (see Iowa Pain Thermometer)

Philadelphia Geriatric Centre Pain Intensity Scale (PHILADELPHIA PIS) A five point intensity scale where 1 = no pain and 6 = extreme pain

Pictorial Representation of Illness and Self-Measure (PRISM) A visual and generic measure of suffering. It assesses the subjective position of one's illness in relation to the self by asking patients to undertake a simple test with circles that represent themselves and their illness

Primary Care Evaluation of Mental Disorders (PRIME-MD) A diagnostic tool for mental health disorders

Proxy Pain Questionnaire (PPQ) A three item assessment tool

Quality of Life Inventory (QOLI) A positive psychology test of happiness, meaning, and quality of life

Rand Coop Scale This tool combines a five point numerical rating scale with descriptors and cartoon figure

Self-Reported Pain Score (SRPS) A score of pain intensity and nature as reported by the person experiencing the pain

Short Physical Performance Battery (SPPB) A group of measures that combines the results of the gait speed, chair stand and balance tests

Spiritual Well-Being Scale (SWBS) A general indicator of well-being providing an overall measure of the perception of spiritual quality of life and also subscale scores for religious and existential well-being

Standardized assessment for Elderly Patients in a primary care setting (STEP) A general health assessment for older adults

Structured Pain Interview (SPI) A standardised means of exploring a patient's pain and the impact upon living and behaviours

UCLA Loneliness Scale A measure of loneliness

Verbal Rating Scale (VRS) Pain is rated verbally on a Likert Scale: no pain, mild pain, moderate pain, severe pain, very severe pain, worst possible pain.

Visual Analogue Scale (VAS) The intensity of pain is rated on a 10 cm line, marked from 'no pain' at one end to 'as bad as it could possibly be' at the other end

Western Ontario and McMaster OA Pain Index Scale A 24 item tool with three subscales to measure pain, stiffness and physical function

Western Ontario and McMaster Universities Arthritis Index (WOMAC) A measure of arthritis

Wong-Baker FACES Pain Scale A six-point self-assessment scale that combines faces, numbers (0–10) and intensity descriptors

World Health Organisation Quality of Life-BREF (WHO QoL-BREF) A quality of life assessment instrument

3. Aims

The primary aim of this revised systematic review was to examine the evidence for the effectiveness of pain assessment strategies in older people with or without cognitive function.

The objectives were to:

- (1) Explore the attitudes and beliefs of older people with pain about the assessment of their pain and interactions with carers
- (2) Evaluate the effectiveness of the assessment of function as a measure of pain in older people
- (3) Evaluate the effectiveness of self-assessment to quantify pain in older people
- (4) Determine if changes in pain assessment strategy are required for people with cognitive impairment, mental health or psychological problems.

4. Methodology

The overall methodology for this assessment document follows the procedures in the British Pain Society *Publication Process Manual* [1].

4.1. Criteria for considering studies for inclusion in this guidance document

The strategies to identify and evaluate, and the methods used to identify recommendations were based upon the Scottish Intercollegiate Guideline Network *SIGN 50* guidance document [3].

4.2. Types of studies

All pain assessment interventions in adult humans with malignant and non-malignant pain over 65 years of age were considered. Patients with and without cognitive impairment, mental health and psychological problems were included.

Pain assessment methods included the use of patient self-report, behavioural studies, plus observation by clinicians and carers. All care settings were considered including: the acute hospital setting, geriatric hospitals, and the community including: retirement apartments, residential homes, nursing homes and other long term care settings.

4.3. Types of outcomes measures

Outcome measures were chosen that were considered pertinent to the assessment of older patients in pain:

- (1) Patient- or observer-rated pain intensity, or pain relief, or both
- (2) Patient compliance with pain assessment strategy
- (3) Impact of cognitive impairment, mental health or psychological problems upon self-report
- (4) Barriers to effective pain assessment.

4.4. Search strategy

All publications on acute and chronic pain screening and assessment in adults over 60 years of age including case reports, cohort studies, review papers, observational studies, randomised controlled trials and systematic reviews in all languages in all care settings were identified from searches of Medline (PubMed), CINAHL, Amed, PsycINFO, Embase, Google Scholar and Cochrane Library between 01.01.2002 and 30.04.2017.

The archives of the British Pain Society, European Pain Society, Irish Pain Society, The British Geriatric Society and the Steinberg Collection were reviewed together with published conference papers and abstracts for the same time period. Professional and patient related internet sites were searched by section contributors. Searches were undertaken by specialist medical librarians in consultation with section contributors who were then provided with abstracts. Search strategies are described in Section 17 with an example of a detailed search provided for the section that explores pain assessment in older adults with mental health and psychological problems. Duplicate abstracts were removed by the librarians in collaboration with the section contributors. Additional references and abstracts were included at this point by the subject experts.

The section contributors then reviewed all abstracts and selected for inclusion those that met the working party pre-defined criteria, search terms and the clinical questions posed by the section editors. Seminal work, published prior to 2002

was included in the subject review section. Individual section contributors applied the NHMRC levels of evidence criteria to publications [4]. The decision to include a paper within a section was made by consensus between the authors and project lead where appropriate. All section papers are identified in a specific reference list and are tabulated by section.

4.5. Evaluations of the literature

The selected publications were considered as potential sources of evidence. Each publication was assessed independently by two individual raters using an agreed method ensure to its methodological quality including study design, statistical analysis and validity of conclusions. Observational studies were assessed using MERGE guidance [5].

4.6. How recommendations were made

The recommendations made by the section contributors were explicitly linked to the supporting evidence that resulted from the search strategies for individual topics. Recommendations were made based on the NHMRC designation [4] levels of evidence (see Table 1), and these recommendations were further confirmed through agreement between two reviewers.

5. Background

Pain is described as an ‘unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage’ [7]. It is classified as acute – associated with trauma or injury – or chronic (lasting longer than three months).

Millions of people who live in the United Kingdom experience chronic pain and as we go into older age, it is suggested that up to 93% of people have pain which is often ‘expected to be part of ageing’ or something that they have to ‘learn to live with’. One of the fundamental issues regarding pain management in any age group is assessment of pain. This can be particularly challenging in older adults due to the age related changes in vision, hearing and cognition. Literature has suggested in the past that we have around 50% of the older population who live in the community experiencing uncontrolled chronic pain. However, what is more worrying is the fact that this number increases significantly to 80% when we look at care home populations. This is really worrying considering that our oldest, often most frail, members of society often live in care homes and yet it appears

Table 1. Levels of evidence (according to the NHMRC* designation [6])

I	Evidence obtained from a systematic review of all relevant randomised controlled trials
II	Evidence obtained from at least one properly designed randomised controlled trial
III-1	Evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method)
III-2	Evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case-controlled studies or interrupted time series with a control group
III-3	Evidence obtained from comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel control group
IV	Evidence obtained from case series, either post-test or pre-test and post-test

*[6] *A guide to the development, implementation and dissemination of clinical practice guidelines*. Commonwealth of Australia, Canberra. Reproduced by permission.

that they are experiencing more moderate to severe uncontrolled pain. Furthermore, it seems accepted that this population are often cared for by the least experienced and non-professionally qualified members of staff.

Recent systematic reviews of epidemiological studies suggest that the estimates of prevalence of chronic pain in the older population are not in fact accurate, and range from between 0 and 93% [8]. Clearly, more work needs to be done in terms of prevalence studies.

If we focus specifically on those who are unable to articulate their pain, thus adults with dementia or other cognitive impairments, we estimate that we have over 700,000 people in the UK with dementias and this is expected to rise significantly. Over the next few years we expect there to be 44 million people worldwide with dementia.

As far back as September 1990 [9], the Royal College of Surgeons, Faculty of Anaesthetists published their report – Pain after Surgery. In that report, it was suggested that pain should be assessed along with other routine observations of blood pressure and pulse. Since then, we have seen recommendations from around the world regarding pain assessment, suggesting that it become the 5th vital sign.

We published national guidance on pain assessment in the older population in 2007 [10]. The purpose of the original version of this document was to focus on the assessment of pain in older people (aged 65 years of age and above) in chronic pain. These new guidelines seek to build upon the original guidelines and to add some new areas of interest which seem to be emerging from the literature, such as the role of interpersonal interaction. It is interesting that things have moved on since our original publication and the recommendations herein are different from those made in 2007.

The management of pain in older people has been addressed elsewhere: Abdulla A, Adams N, Bone M *et al.* 2013 Guidance on the management of pain in older people. *Age and Ageing* 42 (Suppl 1) 1–57 (http://ageing.oxfordjournals.org/content/42/suppl_1.toc) [Accessed 11.09.2017]

6. Introduction

Until relatively recently our knowledge of the prevalence of pain in older people, particularly the oldest old, was relatively poor. Pain tended to be considered as part of the ageing process and was rarely investigated in its own right. There have however been an increasing number of studies into the prevalence of pain in older persons in the last decade.

6.1. Prevalence of pain in older persons

The work on prevalence has been published recently within the *Management of Pain Guidelines* [11], but there are some take home messages that have been incorporated within this document. The prevalence of any type of pain ranged widely from a low of 0% to a high of 93%, clearly illustrating how variations in the population, methods and definitions used

can affect prevalence estimates. The vast majority of studies found that women had a higher prevalence than men.

Different patterns of pain prevalence were seen in men and women and in different sites of pain, however the age differences could be broadly categorised into four groups:

- (a) A continual increase in pain prevalence with age
- (b) An increase in prevalence with age up to 75–85 years and then a decrease with age
- (c) A decrease in pain prevalence with age and
- (d) No difference in pain prevalence with age

Chronic pain was most frequently reported in knees, hips and back.

While previous evidence suggests that chronic pain typically affects those of working age, there is growing evidence to demonstrate that chronic pain continues to increase into the oldest old. [12] found that, although older people experience a decrease in non-disabling back pain, described as benign or mild pain, they experience increased prevalence of disabling back pain, described as severe. This work is further supported by the findings of Thomas *et al.* [13] who reported that the onset of pain that interferes with everyday life continues to increase with age.

7. Attitudes and beliefs

Derek Jones

Research into beliefs which are of an ontological nature is limited. Investigation into ‘just world’ beliefs indicated that older participants had stronger beliefs in a personal and general just world and experienced less pain, disability and psychological distress. The influence of spiritual/religious beliefs (and coping) has been the subject of more investigation but with mixed findings regarding positive outcomes for different elements of the pain experience; cultural differences need particular consideration. Stoicism has been implicated in the underreporting of pain in older people, although pain related stoicism has been subjected to limited empirical investigation. There is some evidence from qualitative and quantitative research to support the existence of age related differences in attitudes of stoicism in the face of pain, its role in influencing pain reporting, and in mediating the chronic pain experience in general.

A bio psychosocial model of pain and a cognitive behavioural approach to its management highlight, in particular, the potentially important roles of the attitudes and beliefs of informal caregivers and professionals in mediating the pain experience. There has been little research conducted into the attitudes and beliefs of these groups; the evidence that does exist suggests that reduced function and increased psychological distress are related to maladaptive spousal beliefs about pain. Whilst investigation of health and social care professionals’ attitudes has been more extensive, it has focused on attitudes and beliefs in relation to working age populations and low back pain. It has also suffered from a lack of conceptual clarity, has not differentiated between cancer and non-cancer pain, and is limited by the absence

of well-established robust measures. The available studies point towards an adherence to bio medically orientated beliefs about pain, a degree of fear-avoidance amongst clinicians in relation to activity recommendations, and a negative orientation to chronic pain patients in general.

Extract taken from Abdulla A *et al.* [11].

8. Communication

Carlos Moreno-Legizamon and Pat Schofield

The literature on pain in older people acknowledges the fact that the process of communication between those in pain and their care givers, either professionals or family, is a complex and difficult process to be grasped. In this context the strong tendency in the literature is to generate tools, mainly scales, which would contribute to an effective diagnosis, expression, assessment and management of chronic pain. Some studies have focused on legitimising the validity and reliability of those scales [14, 15].

A second emerging trend in the literature reviewed is to recommend the inclusion of a more comprehensive concept of communication, which includes important and complementary components such as nonverbal communication (facial expressions), kinesics (body movement), and proxemics (use of space) [16]. There are difficulties when health professionals conceptualise the process of communication as only verbal communication [17]. Again, the latter is, in many ways, the one with which professional caregivers and families are more familiar. Thus a frequent recommendation in the literature is the integration of various components (bio-psycho-social) of the communication process in order to grasp the experiences of those in pain [18]. In turn, this recommendation translates practically to training and education for professional (nurses, physicians and others) and family caregivers in how the communication process works [14, 16, 18, 19].

In the particular case of those with pain in advanced age, with cognitive impairments or from different cultural backgrounds, the process of communication by caregivers becomes even more complex and uncertain. This is because caregivers face more challenges in grasping the process of communication, the consequence of which is that the probability for those in pain to be undertreated or underdiagnosed becomes higher. Jorge and McDonald [20] highlighted this issue in particular in their study, working with 24 Hispanic community dwellings for elder adults in the United States. They found that, when given the opportunity to do so, these groups are able to describe their pain successfully.

The issue we face in the United Kingdom, given the limitation of time for consultation, is that it is difficult for health care professionals to spend time on discussion or consultation. We need not only to understand how the communication process works between vulnerable groups and their caregivers (professional or family), but also to realise that pain is more than mere biology; it is also a bio-psychological (subjective) and social force [18]. Similarly, [21] highlighted in their study that, by providing older

adults with time to discuss their pain through open-ended questions, more success was achieved in completing the Brief Pain Inventory (BPI). Thus, the key message of both of these studies as well as some others [22] is that, assessment is not just about the completion of scales; it should also emphasise that individuals should have an opportunity to talk about their pain experience. In other words, the challenge is how to obtain their pain stories within short time frames.

Finally, while discussing the issue of a multidisciplinary team, Boorsma *et al.* [23] pointed out the need for a systematic multi-disciplinary approach to managing and treating pain. However, this study did not clarify who those professionals should be. It is recommended that a multi-disciplinary team should comprise not only health professionals but also social scientists. The latter are trained to understand the cultural, social, political, economic and communicational aspects of pain and can, therefore, enrich the clinical views.

9. Interpersonal interaction in pain assessment

Jonathon Davies and Sonia Cottom

Assessing pain in older adults is complex ([24]; **Level III-2**) and in many cases, a lack of caregiver ([25]; **Level III-2**; van Herk *et al.* [26]; **Level III-2**) and family knowledge ([27]; **Level III-1**) results in half of those living in pain continuing to do so ([28]; **Level III-2**) for longer than necessary, due to a lack of early detection ([29]; **Level III-1**). This failure effectively to identify and manage pain results in a reduced quality of life ([30]; **Level III-2**) and impacts negatively on interpersonal relationships between the older person and the caregiver due to the association between pain and increased aggression ([31]; **Level IV**; Bradford *et al.* [28]; **Level III-2**).

For specific groups, such as communicative or non-communicative nursing home residents, pain is often not detected ([27]; **Level III-1**) and older people with cognitive impairment have reported more intense pain than their cognitively intact counterparts ([32]; **Level II**). Also, due to the difficulties dementia patients have in communicating their pain, they are at far more risk of being untreated with pharmacological treatments than those without dementia ([33]; **Level III-2**). It has been suggested that approaches to measuring pain should be multi-dimensional ([26]; **Level III-2**) including attempts of self-reported pain for seniors with mild to moderate dementia ([25]; **Level III-2**).

Structured pain education should become a standard training ([34]; **Level II**), including for nursing assistants ([24]; **Level III-2**), to support caregivers in correctly assessing chronic pain in older people and learning how to alleviate it through pharmacological ([30]; **Level III-2**) and non-pharmacological interventions ([31]; **Level IV**). Pain assessment tools should be congruent with the educational levels of those being asked to complete them ([35]; **Level IV**) and further training to understand verbal and non-verbal communication ([27]; **Level III-1**) particularly when working with patients with dementia ([36]; **Level III-2**) should be

provided. Systematic records of patient experiences of pain should also be kept ([25]; **Level III-2**) to help improve continuity of care for older people transferred across settings ([35]; **Level IV**) and for information transferred between staff and family ([27]; **Level III-1**; Buffum and Haberland [37]; **Level III-2**).

10. Self-report measures of pain assessment

Felicia Cox and Karin Cannons

The literature search was limited to English language papers only. Key search terms included: guidelines, pain assessment, older people, self-report. In addition, citations and references in selected journal articles were screened to supplement the search strategy.

- 86 papers were identified
- 73 once duplicates were removed
- 47 papers were considered relevant to the aim of the review. These were read to identify studies and review publications that described pain assessment that employs patient self-report in older people.

The majority of papers were from the US ($n = 22$) with 15 from Europe, four from Australia, three from the UK, two from Canada and one from Brazil. Over 30 different pain assessment tools were described in the included literature. A range of settings were explored including palliative care/inpatient hospice, acute post-operative ward, and long-term nursing home. Most studies explored the accuracy and clinical utility of self-report measures in older patients with and without cognitive impairment.

The most accurate and reliable evidence of the existence of pain and its intensity is the patient's self-report ([38]; **Level III-2**, Phillips [39]) although there are reports of fair agreement between self-report and proxy reports of pain in patients with cognitive impairment associated with dementia ([40]; **Level II**, Leong *et al.* [41]; **Level IV**). That the patient self-report is the most reliable and accurate is true even for patients with impaired cognition [42, 43]. The responsibility for the inclusion of a regular assessment of pain during discussions with the patient lies with the clinician or carer.

Identifying appropriate words that elicit meaningful responses and consistently using this language supported by communication tools is an important part of the comprehensive assessment of a patient's pain. Older people often deny pain, but may respond positively when asked using related terms, such as soreness, aching or discomfort. Rewording your question to elicit the presence of pain such as 'Do you hurt anywhere?' or 'What is stopping you from doing what you want to do?' can substantiate the presence or absence of pain. The strategies employed to identify the presence or absence of pain that have been successful for this individual patient should be clearly recorded in the patient's care record and Hospital Passport. Behaviours that might indicate unrelieved pain such as vocalising, postures and gestures are also important ([44]; **Level IV**) and should be included. This information must be communicated to the care team.

Using a self-report pain measurement tool for a patient with known cognitive, sensory, or motor deficits can be useful. There are a number of validated and reliable tools and the choice of tool should be based on the patient's ability to use the tool. Many patients with moderate to severe cognitive impairment are able to report pain reliably when prompted [45] and there is evidence that supports the assessment being performed by someone who knows the patient well ([46]; **Level II**). By employing the same tool at each pain assessment or using standardised wording during a pain discussion the clinician/carer can elicit a more reliable measure of the effectiveness of any pain interventions. Training and education in the selection of appropriate tools and their use in pain assessment is required ([39]; **Level III**, McAuliffe *et al.* [47]).

One of the key features of facilitating an effective pain assessment or conversation is to ensure that sufficient time is allowed for the older adult to process the question and to formulate a response. Instructing the patient with cognitive impairment on the use of the pain assessment tool each time it is administered can be helpful. Patients that have sensory deficits may require adjustments such as the tool provided in a more accessible format e.g. enlarged font or enhanced lighting.

11. Clinical assessment

Anneyce Knight

There are barriers to delivering optimum pain assessment and management, including practitioners not translating information and knowledge about pain assessment and management into their clinical practice ([48]; **Level I**). Furthermore, severe cognitive impairment and speech difficulties are also well documented barriers to pain assessment ([49]; **Level IV**, Blomqvist and Hallberg [50]; **Level IV**). Nurses' pain assessment skills can also be a potential problem as registered nurses' assessment of pain is seemingly more reliable than that of nursing assistants ([48]; **Level I**, Yi-Heng *et al.* [51]; **Level IV**). This is a challenge for optimal pain assessment if the majority of care for older people is provided by the latter group. In addition, the level of education of staff seems to influence beliefs and knowledge about pain in older people in residential care settings ([44]; **Level IV**).

Pain management based on medical assessment alone is seen as insufficient and a collaborative multi-disciplinary Team (MDT) approach is perceived to be essential ([48]; **Level I**, Cadogan *et al.* [52]; Kaasalainen *et al.* [53]; **Level IV**, Layman *et al.* [54]; **Level IV**). However, it is recognised that there is a range of knowledge and attitudes to pain management within the MDT and that there is a need to improve this by training/education. This should not be restricted solely to initial introductory education, but should be ongoing to ensure that health care professionals understand the factors that influence the best possible assessment for pain management, alongside time and continuity in pain assessment ([55, 56]; **Level III-3**, Blomqvist and Hallberg [50]; **Level IV**, Mrozek and Steble Werner [57]; **Level IV**, Weiner and Rudy

[58]; **Level IV**, Yun-Fang *et al.* [59]; **Level IV**, Zwakhalen *et al.* [44]; **Level IV**.

Furthermore, daily recording of pain improves comparison of pain and pain management ([60]; **Level IV**) and nursing home staff should consider self-report as their initial assessment tool ([61]; **Level IV**). Overall there seems to be a need for more differentiated research relating to members of the MDT, in particular in respect of registered nurses and their assistants relating to the assessment of pain.

12. Self-report measures of function for older people with chronic pain

Denis Martin

Chronic pain affects physical function in older people as in people of all ages and it is commonly assessed by self-report questionnaires. A major consensus statement offered recommendations on self-report measures of physical function in older people with pain, based on review of literature and expert opinion ([62]; **Level II-IV**). This section offers an update from that statement.

A range of self-reported measures are available for use with adults with pain. These measures have been used in studies on older people, and specific validity and reliability in older people has been examined in some measures.

Hadjistavropoulos *et al.* [62] provide a list of measures, which they view as performing well psychometrically and practically in clinical and research settings with older people. For assessment of overall function (as opposed to function related to a specific anatomical area) they list:

- Functional Status Index
- MPI-General Activity Scale
- Physical Activity Scale
- Human Activity Profile
- Groningen Activity Restriction Scale
- Sickness Impact Profile
- SF36 – specifically in relation to its physical functioning and role limitations-physical scales
- Older Americans Resources Service, which is primarily applicable to a USA-based population.

These measures are designed for use in a range of conditions. For a measure of pain and its impact the Pain Disability Index is recommended. Of these measures it is the SF36 that Hadjistavropoulos *et al.* [62] recommend in their suggested battery of measures for assessing pain and its effects in older adults.

A recent addition to that family of measures is the WHO Disability Assessment Schedule (WHODAS) 2.0 [63]. The WHODAS 2.0 (replacing the WHODAS II) addresses physical function within its domains of mobility, self-care, getting along, life activities, cognition and participation. It has a possible added value of being directly linked to the theoretical basis of the well-recognised WHO International Classification of Functioning, Disability and Health. As well as a straightforward procedure for analysis, broadly similar to that in the other measures, it also features the facility to

conduct an advanced (and complex) analysis using Item Response Theory. This has yet to be validated on older people over 65 with chronic pain.

Measures are also available for assessing function related to specific anatomical areas. The major consensus statement [62] is listed the Oswestry Disability Scale and the Roland Morris Disability Questionnaire for back pain; the Neck Pain and Disability Scale for neck pain; the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) for hip and knee pain; and the Disabilities of the Arm, Shoulder and Hand (DASH) for the upper limb. The statement does not include any measure for the foot, which is an oversight given how commonly foot pain features in older people and how disabling it can be. For assessment of function in the foot the Manchester Foot Pain and Disability Index (MFPDI) has demonstrated good psychometric properties in older adults over 65 years ([64]; **Level II+**). A large scale study, which was not exclusively focused on adults over 65 as it also included adults over 50 years, also supported the use of the MFPDI ([65]; **Level II**).

Self-report questionnaires of function are limited in their ability to capture the fluctuations in people's capacity and ability; the concentration on items of relevance to the population of interest means that issues of personal relevance can be obscured [66]. In large research trials and surveys the high numbers involved can iron out such limitations. Innovative uses of technology are also beginning to combine self-report measures with more direct observation (e.g. Wilson *et al.* [67]). However, in a one to one clinical assessment these limitations should be acknowledged and taken into account. It should also be acknowledged that self-report questionnaires are open to biases from such factors as recall and interpretation. For example, in a study on young/middle aged adults with acute back pain, discrepancies were found between self-reported reports of function and more direct measures, with depression noted as influencing the self-report [68]. Therefore, in assessment of an individual any self-report measures should be used alongside a thorough physical examination [62].

13. Pain assessment of older adults with mental health and psychological problems

Rachael Docking & Louise Tarrant

The literature search (Jan 1990–April 2017) identified 5,766 papers, of which 539 were duplicates and 32 were relevant. Three UK papers were included, with the remainder from US, Germany, Australia, Canada, China, Czech Republic, Greece, Jerusalem, Denmark, Sweden, Holland, Hong Kong and Spain.

A range of settings was used, including palliative care/inpatient hospice, acute post-operative ward, veteran rehabilitation unit, long-term nursing home, outpatient tertiary pain management service. The majority were community settings. Most studies used a cross-sectional design of associations between pain, physical functioning, and demographic, social

and psychological factors. Two studies used a longitudinal design.

The most common self-report assessment tools for pain included: Multidimensional Pain Inventory (MPI), Pain & Impairment Relationship Scale (PAIRS), McGill Pain Questionnaire (MPQ), PRI, Brief Pain Inventory (BPI) (and in some cases: interRAI, Long term care facility (LTCF), STEP, Oswestry Disability Index (ODI), and items from Short Form (SF-36). The self-report assessment tools for mood most commonly used were: Geriatric Depression Scale (GDS), Centre for Epidemiologic Studies (CES-D), Disability Rating Scale (DRS), Depression Anxiety Stress Scale (DASS) (and in some cases: Postural Assessment Scale (PASS), Hospital Anxiety & Depression Scale (HADS), Addiction Severity Index (ASI), CAMDEX, PVS, and selected items from Kessler (K6), Movement Disorder Society (MDS), SF-36). Physician recorded diagnosis, structured interviews, body map diagrams, simple checklists, multiple choice questions and Likert scales designed specifically for the research were also used to assess pain and mood.

Strong associations were seen between pain and depressed mood with each being a risk factor for the other. Additionally, loneliness/social isolation were associated with an increased risk of pain. Older adults who experienced communication difficulty coupled with depression, also reported higher pain scores.

Clinicians should be cognizant that social isolation and/or depressive signs and symptoms may be indicators of pre-existing pain or a predictor of future pain onset. Additionally, clinicians need to be aware of the added effects of communication difficulty on pain report in those who also experience symptoms of depression.

The levels of evidence for the included studies are shown in Table 17.7.

14. Pain assessment in cognitive impairment

Patricia Schofield

The literature search identified 164 papers, of which 54 were duplicates and 32 were relevant. Forty nine papers were reviewed in total. The majority of papers were from the US ($n = 27$), the remainder were from Germany, France, Australia, Austria, UK, Canada, New Zealand and Norway. Fifteen of the papers were systematic reviews which were aimed at consolidating the state of the science. All but five of the studies involved the testing of pain scales. Four studies were intervention studies and three studies [69–71] involved surveys of the staff and perceived barriers to pain assessment implementation. Rainfray *et al.* [71] surveyed 221 hospital staff in France regarding the use of the Doloplus scale. Whilst Keane *et al.* [70] surveyed 58 consultant geriatricians in Ireland regarding the use of a number of scales (Numerical Rating Scale (NRS), Visual Analogue Scale (VAS), Verbal Rating Scale (VRS), NRS, Faces Rating Scale (FRS)). A range of settings were used including: nursing home, acute, dental.

The intervention studies varied between: measuring the impact of education upon pain assessment practice ([72]; **Level II++**), to the use of pressure or aversive stimuli used to inflict pain which is then subsequently measured using a behavioural scale or facial expression.

In terms of behavioural pain assessment scales, we identified a total of 12 scales (Abbey, PAINAD, Pain Assessment Scale for Seniors with Severe Dementia (Pacslac), Disability Distress Scale (DisDat), Pade, Universal Pain Assessment Tool (Paine), Doloplus, NoPain, Checklist of Nonverbal pain indicators (CNPI), Assessment of discomfort in Dementia (ADD), Mobilization-Observation-Behavior-Intensity-Dementia Pain Scale (Mobid) & COOP). The recent review undertaken for these guidelines has identified sixteen scales, an increase of four scales. In 2007, we recommended the use of the Abbey, PAINAD or Doloplus scales based upon the best evidence at the time. We also recommended that more work needed to be done in terms of validating scales as opposed to developing any new scales. There has been no further work in terms of validating the Abbey scale, yet it still remains popular in the UK. The Bolton Pain Assessment Tool (BPAT) continues to be evaluated in clinical practice in different settings [73].

There have been a number of studies which have further explored the Doloplus scale ([74]; **Level I+**, Holen *et al.* [75]; **Level II+**, Rainfray *et al.* [71]; **Level II**, Hutchison *et al.* [76]; **Level II+**, Pickering [77]; **Level II+**). Furthermore, this scale has now been translated into many languages including English for use across Europe, yet it remains unpopular in the UK.

More work has been carried out using Pacslac ([78]; **Level II+**, Schiepers *et al.* [79]; **Level II**, Zwakhlen *et al.* [80]; **Level II**, Lints-Martindale *et al.* [81]; **Level II+**) and PAINAD ([82]; **Level III**, Jordan *et al.* [83]; **Level III**, Lane *et al.* [84]; **Level III**, DeWaters *et al.* [85]; **Level III**). The Pacslac scale has good inter-rater reliability ([78]; **Level II+**), is the scale most valued by nurses ([80]; **Level III**), but does need a short form and more testing in larger scale studies. PAINAD is a sensitive tool for detecting pain in adults with dementia, but does have a high false positive rate ([83]; **Level III**). The scale has not been evaluated in adults with mild to moderate dementia, but we do know that adults with mild to moderate dementia can appropriately use self-report measures and scales such as numerical rating scale and verbal descriptors. Nevertheless, PAINAD has a high sensitivity (92%) but low specificity for pain (62%). It is easy and simple to use. More research is needed using larger sample sizes and Black & Minority Ethnic groups.

15. Pain assessment guidelines for older adults

Gary Bellamy and Aza Abdulla

We conducted a review which aimed to identify existing guidelines (national and international) relating specifically to pain assessment in older adults in order to set in context

this revision of the 2007 guidelines. Pain assessment is a fundamental process in effective pain management. For more detailed information please see Turk D, Melzack R [86] *Handbook on Pain Assessment*.

Search strategy: A three phase process was adopted. Based on the assumption that existing guidelines might not be available or published solely via academic journals, two additional searches were also conducted (see 2 and 3 below).

- (1) A literature review of key databases was conducted, including: **Academic Search Premier, MEDLINE, Psychology and Behavioural Sciences Collection, PsycINFO, CINAHL Plus with Full Text, MEDLINE, EMBASE** of journal articles published between 1997 and 2013. The search was limited to English Language papers only. Key search terms included: guidelines; pain assessment; older people. In addition, citations and references in selected journal articles were screened to supplement the search strategy.
 - 73 papers were identified
 - 47 once duplicates were removed
 - 43 papers were considered relevant to the aim of the review. These were read to identify existing guidelines for pain assessment in older people (see attached document for articles reviewed).
 - The 43 papers were reviewed to identify and review pain guidelines relating specifically to older people
- (2) A list of world countries was also identified via the website: http://www.nationsonline.org/oneworld/countries_of_the_world.htm

Using the search engine Google scholar and the same search terms, each country on that list was added to the initial search terms. This was done so as not to miss any guidelines which may have been published elsewhere but may not have featured in academic journal articles.

- (3) To ascertain additional pain assessment guidelines not identified via the above searches, an advanced search of the websites: The National Guideline Clearinghouse <http://www.guideline.gov> and NICE <http://www.nice.org.uk/> were conducted. The site aims to provide physicians and other health professionals, health care providers, health plans, integrated delivery systems, purchasers and others, with an accessible mechanism for obtaining objective, detailed information on clinical practice guidelines, and to further the dissemination, implementation, and use of these guidelines.

The advanced search filters used were:

- Search strategy key words: 'Pain'
- Age of target population: Aged 65–79 and 80 years plus
- Clinical speciality: Geriatrics

For the most part, guidelines relating to pain assessment in older adults are manifest in the USA, Australia and the UK. To a lesser extent, work has also been conducted in Spain, Belgium and Switzerland. The work of

the latter three countries has been mentioned briefly in this document.

USA

In 1998 the American Geriatrics Society (AGS) provided the first clinical practice guideline on the management of chronic pain in older people [87]. This was updated in 2002 [88]. Both versions concentrated on the assessment of pain and its pharmacological management.

The guidelines put forward by the AGS [88] are divided into four sections. These include: the assessment of persistent pain, pharmacologic treatment, non-pharmacologic strategies, and recommendations for health systems that care for older persons. For each section, general principles are followed by the panel's specific recommendations for improving the clinical assessment and management of persistent pain in older persons. These recommendations are meant to serve as a guide to practice and should not be used in lieu of critical thinking, sound judgment, and clinical experience.

The guidelines produced in 2002 by the AGS were subsequently revised in 2009 by an expert panel assembled under the auspices of the American Geriatrics Society, with recommendations for pharmacologic management of pain in older adults [89]. It was determined that the sections of the 2002 guideline dealing with assessment and non-pharmacologic treatment did not need updating and were still relevant to today's practicing clinicians. However, another guideline was developed describing medications to avoid and dosing modifications for older adults with poor renal clearance [90]. The American Society for Pain Management Nursing Task Force on Pain Assessment in the Nonverbal Patient (including individuals with dementia) also recommended a comprehensive, hierarchical approach that integrates self-report and observations of pain behaviours [91].

Guidelines created by an expert group convened by the American Pain Society and the American Academy of Pain Medicine evaluated the current evidence on safe practices for the use of opioids to treat non-cancer pain [92]. Notably, comprehensive approaches were recommended to address psychosocial factors and functional impairment as well as pain. Specific recommendations for older patients include low-dose initiation and slow titration of opioid therapy, constipation prophylaxis and frequent monitoring of patient responses to therapy. These guidelines provide some of the landmark principles for pain treatment decisions and care of older adults today. Current guidelines in relation to general principles of pharmacological pain management for older people [89] state:

- Use the least invasive route for medication
- Where possible, choose sustained release formulations
- Introduce one agent at a time, at a low dose, followed by slow dose-titration
- Allow a sufficiently large interval between introducing drugs to allow assessment of the effect
- Treatment should be constantly monitored and adjusted if required to improve efficacy and limit adverse events
- It may be necessary to switch opioids.

Australia

The Australian Pain Society addresses the issue of pain in its first ever publication focused exclusively on older adults; it is entitled *Pain in Residential Aged Care Facilities: Management Strategies* [93]. It presents strategies and guidance to assist in identifying and assessing residents' pain effectively across a range of areas that includes managing pain using a combination of pharmacological and non-pharmacological treatment options. It also examines issues of quality management and organisational structure related to pain management. An additional document, the *Pain Management Guidelines (PMG) Kit for Aged Care* [94] has been designed to be used with the Australian Pain Society's document [93] to assist in the implementation of best practice for pain management in aged care facilities.

The APS document [93] draws upon relevant international best practice approaches, expert opinion and published research evidence up to 2004 – particularly from the American Geriatric Society and the American Medical Directors and Health Care Associations. The document is evidence based and should be used to guide decision making about changes to current practice. The pain management guidelines are a summary only and should not be used in isolation to guide practice.

United Kingdom (UK)

In 2007 the Royal College of Physicians, British Pain Society and British Geriatric Society published their guidelines on the assessment of pain in older adults [95]. The emphasis of the document is on chronic pain management and it is a comprehensive guide to the methods of assessment and the tools available. The guidelines recommend that for older adults with mild to moderate dementia, the numerical rating scale and the verbal rating scales can be applied. However, as the level of cognitive impairment becomes more severe, specific behavioural scales should be used, of which there are 11, to measure pain intensity. The guidelines suggest that the Abbey Pain Scale appears to be the most user-friendly. They are designed to allow clinicians to make rapid, informed decisions based wherever possible on synthesis of the best available evidence and expert consensus gathered from practising clinicians and service users. A key feature of the series is to provide both recommendations for best practice, and where possible practical tools with which to implement it.

The concise guidelines for pain management in older adults include the following:

(1) Pain awareness

All healthcare professionals should be alert to the possibility of pain in older people, and to the fact that older people are often reluctant to acknowledge and report pain.

(2) Pain enquiry

Any health assessment should include enquiry about pain, using a range of alternative descriptors (e.g. sore, hurting, and aching).

(3) Pain description

Where pain is present, a detailed clinical assessment of the multidimensional aspects of pain should be undertaken including:

- Sensory dimension: the nature, location and intensity of pain
- Affective dimension: the emotional component and response to pain
- Impact: on functioning at the level of activities and participation.

3.1 Pain location

An attempt to locate pain should be made by asking the patient to point to the area on themselves, and by using pain maps to define the location and the extent of pain.

3.2 Pain intensity

Pain assessment should routinely include the use of a standardised intensity rating scale, preferably a simple verbal descriptor scale or a numeric rating scale if the person is able to use these.

(4) Communication

Every effort should be made to facilitate communication particularly with those people with sensory impairments (hearing aids and glasses for example). Self-report assessment scales should be offered in an accessible format (e.g. EasyRead) to suit the strengths of the individual.

(5) Assessment in people with impaired cognition/communication

People with moderate to severe communication problems should be offered additional assistance with self-report through the use of suitably adapted scales and facilitation by skilled professionals. In people with very severe impairment, and in situations where procedures might cause pain, an observational assessment of pain behaviour is additionally required. Pain behaviours differ between individuals, so assessment should include insights from familiar carers and family members to interpret the meaning of their behaviours.

(6) Cause of pain

Careful physical examination should be undertaken to identify any treatable causes. However, staff should be aware that pain can exist even if physical examination is normal.

(7) Re-evaluation

Once a suitable scale has been identified, serial assessment should be undertaken using the same instrument to evaluate the effects of treatment [95].

Another guidance document was produced in 2013 which reviews the epidemiology and management of pain in older people via a literature review of published research. This document informs health professionals in any care setting who work with older adults regarding best practice for pain management [96]. The document is separated into sections addressing pharmacology, interventional therapies, psychological interventions, physical activity and assistive devices and complementary therapies.

(8) Spain

Spanish geriatricians typically rely on the American Geriatrics Society (AGS) Panel on Persistent Pain in Older Persons guideline [88] and the recommendations of the Assessing Care of Vulnerable Elders (ACOVE) project (Rand Health 2000). A regional guideline for the management of chronic pain in older adults in nursing homes was released in Valencia, but no geriatricians contributed and it is rarely used. The Sociedad Española de Geriatria y Gerontología (SEGG) has published two booklets with recommendations on pain management in older people [95, 97, 98], but these are not used widely either.

(9) Belgium

There are no official clinical guidelines or standards for the management of chronic pain that focus exclusively on older patients. However, there is a pocket guide concerning the treatment of pain in older people written by Belgian pain specialists and geriatricians [99]. Many hospitals and nursing homes have developed their own tools and standards. These are mostly locally available and not widely known.

(10) Switzerland

According to Pautex *et al.* [100] the management of chronic pain in older patients has received some attention in Switzerland recently. In collaboration with the division of clinical pharmacology and toxicology, guidelines have been developed in Geneva University Hospitals for the use of opioids in the older population, in particular for those with renal impairment. Some other local tools might be available in the German or Italian part of Switzerland [100].

The importance of pain assessment is clearly acknowledged and specific tools and strategies are promoted in older patients, especially for those with impaired

communication abilities. Furthermore, pain management has received increased attention, in stationary and ambulatory settings, and for different types of pain. It has been stressed that chronic pain in older people does require taking into account both the somatic co-morbidities and the psychosocial dimensions. Indeed, chronic pain and associated functional limitations may be an indicator of distress and of a need for help. The therapeutic response will then address and highlight the patient's functional capacities, aiming to re-mobilise the patient's resources; pain management will focus on restoring self-esteem and increasing quality of life. Treating a concomitant depression requires a true commitment from the therapist; its benefits are clearly documented in older patients. However, no specific standards have yet been devised for the management of chronic pain in older patients [101].

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17. Matrices

Available in *Age and Ageing* online.

18. References

1. British Pain Society. Publication Process Manual December 2010 v1.2. London: British Pain Society, 2010. Available from http://www.britishpainsociety.org/pub_process_manual.pdf [Accessed 7.07.2014].
2. Registered Nurses' Association of Ontario (RNAO) *Assessment and management of pain in the elderly: Self-directed learning package for nurses in long-term care*. 2007. Available from: http://www.pulserx.ca/docs/Assessment_and_Management_of_Pain_in_the_Elderly.pdf [Accessed 22.7.14]
3. Scottish Intercollegiate Guidelines Network. SIGN 50 A guideline developer's handbook. Edinburgh: SIGN, 2011. Available from <http://www.sign.ac.uk/guidelines/fulltext/50/index.html> [Accessed 8.07.2014].
4. National Health and Medical Research Council *How to review the evidence; systematic identification and review of the scientific literature*. 1999. Canberra, NHMRC. Available from http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cp65.pdf [Accessed 8.07.2014]
5. Liddle J, Williamson M, Irwig L. Method for Evaluating Research Guideline Evidence. Sydney: NSW Health Department, 1996.
6. National Health and Medical Research Council. A guide to the development, implementation and dissemination of clinical practice guidelines. Canberra, NHMRC: © Commonwealth of Australia, 1999.
7. Merskey H, Bogduk N (eds) *Classification of chronic pain: Descriptions of chronic pain syndromes and definition of pain terms*. 1994. International Association for the Study of Pain. Available from: <http://www.iasp-pain.org/files/Content/ContentFolders/Publications2/FreeBooks/Classification-of-Chronic-Pain.pdf> [Accessed 22.7.14]
8. Elliott A. Prevalence of pain in older adults. In: P Schofield (ed) *The management of pain in older adults*. Age Ageing 2013; 42: 1.
9. Royal College of Surgeons, Faculty of Anaesthetists. Report of the Working Party on Pain after surgery. London: RCSENG - Professional Standards and Regulation, 1990.
10. Royal College of Physicians, British Geriatrics Society and British Pain Society *The assessment of pain in older people: national guidelines*. Concise guidance to good practice series, No 8. London, RCP, 2007. Available from: http://britishpainsociety.org/book_pain_older_people.pdf [Accessed 20.7.14]
11. Abdulla A, Adams N, Bone M *et al*. Guidance on the management of pain in older people. Age Ageing 2013; 42(Suppl 1): 1–57. http://ageing.oxfordjournals.org/content/42/suppl_1.toc. [Accessed 1.07.14].
12. Dionne CE, Dunn KM, Croft PR. Does back pain prevalence really decrease with increasing age? A systematic review. Age Ageing 2006; 35: 229–34. Epub 2006 Mar 17.
13. Thomas E, Mottram S, Peat G, Wilkie R, Croft P. The effect of age on the onset of pain interference in a general population of older adults. Prospective findings from the North Staffordshire Osteoarthritis Project (NorStOp). Pain 2007; 129: 21–7.
14. Carr ECJ. Evaluating the use of a pain assessment tool and care plan: a pilot study. J Adv Nurs 1997; 26: 1073–9.
15. Haskard-Zolnierik K. Communication about patient pain in primary care: Development of the Physician-patient Communication About Pain scale (PCAP). Patient Educ Couns 2012; 86: 33–40.
16. Blomqvist K, Hallberg I. Recognising pain in older adults living in sheltered accommodation: the views of nurses and older adults. Int J Nurs Stud 2001; 38: 305–18.
17. Machado AC, Bretas CA. Comunicacao nao-verbal de idosos frente ao processo de dor (Nonverbal communication of elderly patients facing the pain process). Rev Bras Enferm 2006; 59: 129–33.
18. Hadjistavropoulos T, Craig DK, Duck S *et al*. A biopsychosocial formulation of pain communication. Psychol Bull 2011; 137: 910–39.
19. Blomqvist K. Older people in persistent pain: nursing and paramedical staff perceptions and pain management. J Adv Nurs 2003; 41: 575–84.
20. Jorge J, McDonald D. Hispanic older adults osteoarthritis pain communication. Pain Manag Nurs 2011; 12: 173–9.
21. McDonald D, Shea M, Rose L *et al*. The effect of pain question phrasing on older adult pain information. J Pain Symptom Manage 2009; 37: 1050–60.
22. De Rond MEJ, Van Dam F, Muller M. A pain monitoring program for nurses: Effects on communication, assessment and documentation of patient's pain. J Pain Symptom Manage 2000; 20: 424–39.
23. Boorsma M, Frijters DHM, Knol DL, Ribbe ME, Nijpels G. Effects of multidisciplinary integrated care on quality of care in residential care facilities for elderly people: a cluster randomized trial. Can Med Assoc J 2011; 183: E724–732.
24. Horgas A, Dunn K. Pain in nursing home residents. Comparison of residents' self-report and nursing assistants' perceptions. Incongruencies exist in resident and caregiver reports of pain; therefore, pain management education is needed to prevent suffering. J Gerontol Nurs 2001; 27: 44–53.
25. Martin R, Williams J, Hadjistavropoulos T, Hadjistavropoulos H, MacLean M. A qualitative investigation of seniors' and caregivers' views on pain assessment and management. Canad J Nurs Res 2005; 37: 142–65.
26. Van Herk R, van Dijk R, Biemold N, Tibboel D, Baar F, de Wit R. Assessment of pain: can caregivers or relatives rate pain in nursing home residents? J Clin Nurs 2009; 18: 2478–85.
27. Hall-Lord M, Johansson I, Schmidt I, Larsson BW. Family members' perceptions of pain and distress related to analgesics and psychotropic drugs, and quality of care of elderly nursing home residents. Health Soc Care Commun 2002; 11: 1365–2524.
28. Bradford A, Shrestha S, Snow L *et al*. Managing pain to prevent aggression in people with dementia: A non-pharmacologic intervention. Am J Alzheimer's Dis Other Demen 2012; 27: 41–7.
29. Cheung G, Choi P. The use of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) by caregivers in dementia care facilities. N Z Med Assoc 2008; 121: 21–9.
30. Ghafoor V. Management of painful conditions in the elderly. J Pharm Pract 2003; 16: 249–60.
31. Couilliot MF, Dares V, Delahaye G *et al*. Acceptability of an acupuncture intervention for geriatric chronic pain: an open pilot study. J Integr Med 2012; 11: 26–31.
32. Allen R, Haley W, Small B, McMillan S. Pain reports by older hospice cancer patients and family caregivers: The role of cognitive functioning. Gerontologist 2002; 42: 507–14.
33. Shega J, Hougham G, Stocking C, Cox-Hayley B, Sachs G. Management of noncancer pain in community-dwelling persons with dementia. Am Geriatr Soc 2006; 54: 1892–7.

34. Ferrell B, Ferrell B, Ahn C, Tran K. Pain management for elderly patients with cancer at home. *Cancer* 1994; 74(7 Suppl): 2139–146.
35. Johnson P, Nay R, Gibson S. Assessing pain in non-verbal older people with cognitive impairment. *Anaesth Intensive Care* 2011; 39. [ASA Abstract].
36. Menten J, Teer J, Cadogan M. The pain experience of cognitively impaired nursing home residents: Perceptions of family members and certified nursing assistants. *Pain Manag Nurs* 2004; 5: 118–25.
37. Buffum M, Haberfelde M. Moving to new settings: Pilot study of families' perceptions of professional caregivers' pain management in persons with dementia. *J Rehabil Res Dev* 2007; 44: 295–304.
38. Pautex S, Herrmann F, Le Lous P, Fabjan M, Michel JP, Gold G. Feasibility and reliability of four pain self-assessment scales and correlation with an observational rating scale in hospitalized elderly demented patients. *The Journals of Gerontology: Series A: Biological Sciences and Medical Sciences* S2. *J Gerontol* 2005; 60A: 524–9.
39. Phillips SE. Pain assessment in the elderly. *US Pharm* 2007; 32: 37–52.
40. Jensen-Dahm C, Vogel A, Waldorff FB, Waldemar G. Discrepancy between self- and proxy-rated pain in Alzheimer's disease: results from the Danish Alzheimer Intervention Study. *J Am Geriatr Soc* 2012; 60: 1274–8.
41. Leong IY, Chong MS, Gibson SJ. The use of a self-reported pain measure, a nurse-reported pain measure and the PAINAD in nursing home residents with moderate and severe dementia: a validation study. *Age Ageing* 2006; 35: 252–6.
42. Pautex S, Herrmann F, Michel JP, Gold G. Psychometric properties of the Doloplus-2 observational pain assessment scale and comparison to self-assessment in hospitalized elderly. *Clin J Pain* 2007; 23: 774–9.
43. Stolee P, Hillier LM, Esbaugh J *et al.* Instruments for the assessment of pain in older persons with cognitive impairment. *J Am Geriatr Soc* 2005; 53: 319–26. Biennial Convention, *Sigma Theta Tau International Honor Society of Nursing*, 37th, Nov, 2003, Toronto, ON, Canada.
44. Zwakhalen S, Hamers J, Peijnenburg M. Nursing staff knowledge and beliefs about pain in elderly nursing home residents with dementia. *Pain Res Manag* 2007; 12: 177–84.
45. Manz BD, Mosier R, Nusser-Gerlach MA *et al.* Pain assessment in the cognitively impaired and unimpaired elderly. *Annual Midwest Nursing Research Society Conference*. 2000. 22nd, Mar, 1998, Columbus, OH, US 1(4) 106–15.
46. Gregory J. Identifying a Pain Assessment Tool for Patients with Cognitive Impairment in Acute Care. London: Foundation of Nursing Studies, 2011.
47. McAuliffe L, Nay R *et al.* Pain assessment in older people with dementia: literature review. *J Adv Nurs* 2008; 65: 2–10.
48. Brown D. A literature review exploring how healthcare professionals contribute to the assessment and control of post-operative pain in older people. *J Clin Nurs* 2004; 13: 74–90.
49. Cohen-Mansfield J. Nursing staff members' assessment of pain in cognitively impaired nursing home residents. *Pain Manag Nurs* 2005; 6: 68–75.
50. Blomqvist K, Hallberg I. Pain in older adults in sheltered accommodation between assessment by older adults and staff. *J Clin Nurs* 1999; 8: 150–69.
51. Yi-Heng C, Li-Chan L, Watson R. Validating nurses' and nursing assistants' report of assessing pain in older people with dementia. *J Clin Nurs* 2010; 19: 42–52.
52. Cadogan M, Schnelle J, Al-Sammarrai N, Yamamoto-Mitani N, Cabrera G, Osterweil D. A standardized quality assessment system to evaluate pain detection and management in the nursing home. *J Am Med Dir Assoc* 2005; March Supplement: S11–9.
53. Kaasalainen S, Coker E, Dolovich L *et al.* Pain management decision making among long-term care physicians and nurses. *Can J Nurs Res* 2007; 39: 14–31.
54. Layman YJ, Horton F, Davidhizar R. Nursing attitudes and beliefs in pain assessment and management. *J Adv Nurs* 2006; 53: 412–21.
55. Clark L, Fink R, Pennington K, Jones K. Nurses' reflections on pain management in a nursing home setting. *Pain Manag Nurs* 2006; 7: 71–7.
56. Gregory J, Haigh C. Multi-disciplinary interpretation of pain in older patients on medical units. *Nurse Educ Pract* 2007; 8: 249–57.
57. Mrozek J, Werner JS. Nurses attitudes towards pain, pain assessment and pain management practices in long term care facilities. *Pain Manag Nurs* 2001; 2: 154–62.
58. Weiner K, Rudy T. Attitudinal barriers to effective treatment of persistent pain in nursing home residents. *J Am Geriatr Soc* 2002; 50: 2035–40.
59. Yun-Fang T, Hsiu-Hsin T, Yeur-Hur L. Pain prevalence, experience and management strategies among the elderly in Taiwanese nursing homes. *J Pain Symptom Manage* 2004; 28: 579–84.
60. Liu J, Pang P, Lo K. Development and implementation of an observational pain assessment protocol in a nursing home. *J Clin Nurs* 2012; 21: 1789–93.
61. Jones K, Fink R, Hutt E *et al.* Measuring pain intensity in nursing home residents. *J Pain Symptom Manage* 2005; 30: 519–27.
62. Hadjistavropoulos T, Herr K, Turk D *et al.* An interdisciplinary expert consensus statement on assessment of pain in older persons. *Clin J Pain* 2007; 23: S1–S43.
63. Ustun TB, Chatterji S, Kostanjsek N *et al.* Developing the World Health Organisation Disability Assessment Schedule 2.0. *Bull World Health Organ* 2010; 88: 815–23. Available from <http://www.who.int/bulletin/volumes/88/11/09-067231/en/> [Accessed 11.09.2017].
64. Menz HB, Tiedemann A, Kwan MM, Plumb K, Lord SR. Foot pain in community-dwelling older people: an evaluation of the Manchester Foot Pain and Disability Index. *Rheumatology* 2006; 45: 863–7.
65. Roddy E, Muller S, Thomas E. Defining disabling foot pain in older adults: further examination of the Manchester Foot Pain and Disability Index. *Rheumatology* 2009; 48: 992–6.
66. Ong BN, Hooper H, Jinks C, Dunn K, Croft PJ. 'I suppose that depends on how I was feeling at the time': perspectives on questionnaires measuring quality of life and musculoskeletal pain. *Health Service Res Policy* 2006; 1: 81–8.
67. Wilson G, Jones D, Schofield P, Martin D (2013) The use of the Sensecam to explore daily functioning of older adults with chronic pain. *SenseCam 2013*, San Diego. Abstracts 76–77.
68. Wand BM, Chiffelle LA, O'Connell NE, McAuley JH, DeSouza LH. Self-reported assessment of disability and performance-based assessment of disability are influenced by

- different patient characteristics in acute low back pain. *Eur Spine J* 2010; 19: 633–40.
69. Gnass I, Nestler N, Osterbrink J. *Pitfalls of pain management in nursing homes*. Poster presented at 6th World Congress, World Institute of Pain, Miami, USA. 2012.
70. Keane RA, Williams C, O'Neill D. Pain assessment in specialist services for older people: A national perspective. *J Am Geriatr Soc* 2010; 58: 1614–5.
71. Rainfray M, Brochet B, de Sarasqueta A. Assessment of pain in elderly hospitalised patients: a transversal descriptive survey. *Presse Med* 2003; 32: 924–9.
72. Manias E, Gibson S, Finch S. Testing an educational nursing intervention for pain assessment and management in older people. *Pain Med* 2011; 12: 1199–215.
73. Gregory J. Initial testing of a behavioural pain assessment tool within trauma units. *Int J Orthop Trauma Nurs* 2017; 24: 3–11.
74. Pautex S, Michon A, Guedira M *et al*. Pain in severe dementia: Self-assessment or observational scales? *J Am Geriatr Soc* 2006; 54: 1040–5.
75. Hølen JC, Saltvedt I, Fayers PM *et al*. Doloplus-2, a valid tool for behavioural pain assessment? *BMC Geriatr* 2007; 19: 29.
76. Hutchison R, Tucker WF Jr, Kim W *et al*. Evaluation of a behavioral assessment tool for the individual unable to self-report pain. *Am J Hosp Palliat Med* 2006; 23: 328–31.
77. Pickering G. Reliability study in five languages of the translation of the pain behavioural scale Doloplus. *Eur J Pain* 2010; 14: 545e1–10.
78. Cheung G, Choi P. The use of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) by caregivers in dementia care facilities. *N Z Med J* 2008; 121: 21–9.
79. Schiepers P, Bonroy BC, Leysens A *et al*. On-site electronic observational assessment tool for discomfort and pain. *Comput Methods Programs Biomed* 2010; 99: 34–42.
80. Zwakhalen S, van't Hof C, Hamers JP. Systematic pain assessment using an observational scale in nursing home residents with dementia: exploring feasibility and applied interventions. *J Clin Nurs* 2012; 21: 3009–17.
81. Lints-Martindale A, Hadjistavropoulos T, Lix L, Thorpe L. A comparative investigation of observational pain assessment tools for older adults with dementia. *Clin J Pain* 2011; 28: 226–37.
82. Horgas A, Miller L. Pain assessment in people with dementia. *Am J Nurs* 2008; 108: 62–70.
83. Jordan A, Hughes J, Pakresi M *et al*. The utility of PAINAD in assessing pain in a UK population with severe dementia. *Int J Geriatr Psychiatry* 2009; 26: 118–26.
84. Lane P, Kuntupis M, MacDonald S *et al*. A pain assessment tool for people with advanced Alzheimers and other dementias. *Home Healthc Nurse* 2003; 21: 32–7.
85. DeWaters T, Faut-Callahan M, McCann J *et al*. Comparison of self-reported pain and the PAINAD scale in cognitively impaired and intact older adults after hip fracture surgery. *Orthop Surg* 2008; 27: 21–8.
86. Turk D, Melzack R. *Handbook on Pain Assessment*. New York: Guilford Press, 1992.
87. American Geriatrics Society. AGS Panel on Chronic Pain in Older Persons. The management of chronic pain in older persons. *J Am Geriatr Soc* 1998; 46: 635–51.
88. American Geriatrics Society. AGS Panel on Persistent Pain in Older Persons. The management of persistent pain in older persons. *J Am Geriatr Soc* 2002; 50: S205–224.
89. American Geriatrics Society. AGS Panel on the Pharmacological Management of Persistent Pain in Older Persons. Pharmacological management of persistent pain in older persons. *J Am Geriatr Soc* 2009; 57: 1331–46.
90. Hanlon JT, Aspinall SL, Semla TP *et al*. Consensus guidelines for oral dosing of primarily renally cleared medications in older adults. *J Am Geriatr Soc* 2009; 57: 335–40.
91. Herr K, Coyne PJ, Key T *et al*. Pain assessment in the non-verbal patient: Position statement with clinical practice recommendations. *Pain Manag Nurs* 2006; 7: 44–52.
92. Chou R, Fanciullo GJ, Fine PG *et al*. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *Journal of Pain* 2009; 10: 113–30.
93. Australian Pain Society *Pain in Residential Aged Care Facilities: Management Strategies*. North Sydney, New South Wales, Australia. 2005.
94. Edith Cowan University. The PMG Kit for Aged Care: An implementation kit to accompany the Australian Pain Society's Pain in Residential Aged Care Facilities: Management Strategies Commonwealth Copyright Administration Barton: ACT, 2007 Available from: [http://www.health.gov.au/internet/main/publishing.nsf/Content/347C7332D1D56A71CA257BF0001DAD8B/\\$File/PMGKit.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/347C7332D1D56A71CA257BF0001DAD8B/$File/PMGKit.pdf) [Accessed 11.09.2017].
95. Sociedad (2012) Española de Geriatria y Gerontologia. Guía de buena práctica clínica en Geriatria. *Dolor crónico en el anciano* IMC, Madrid.
96. British Geriatrics Society. Guidance on the management of pain in older people. *Age Ageing* 2013; 42: i1–i57.
97. Ducloux D, Guisado H, Pautex S. Promoting sleep for hospitalized patients with advanced cancer with relaxation therapy: experience of a randomized study. *Am J Hosp Palliat Care* 2013; 30: 536–40.
98. Sociedad (2001) Española de Geriatria y Gerontologia. *Dolor en el anciano Glosa Ediciones*, Barcelona.
99. Borlion B, Lecart MP. Pijn en ouderen. Een praktische gids. Morlion: Lannoo Campus, 2010.
100. Pautex S, Rexach-Cano L, van den Noorgate N, Cedraschi C, Cruz-Jentoft AJ. Management of chronic pain in old patients: Belgium, Spain and Switzerland. *Eur Geriatr Med* 2013; 4: 281–7.
101. Allaz AF, Cedraschi C, Rentsch D, Canuto A. Chronic pain in elderly people: psychosocial dimension. *Rev Med Suisse* 2011; 7: 1470–10.
102. Bagnara L, Colombo E, Bilotta C, Vergani C, Bergamaschini L. Il dolore cronico nel paziente anziano (Persistent pain in the elderly). *G Gerontol* 2009; 57: 262–6.
103. Belin C, Gatt MT. Douleur et démence (Pain and Dementia). *Psychol Neuropsychiatr Vieil* 2006; 4: 247–54.
104. Carnes D, Underwood M. The importance of monitoring patient's ability to achieve functional tasks in those with musculoskeletal pain. *Int J Osteopath Med* 2008; 11: 26–32.
105. Cohen-Mansfield J, Lipson S. The utility of pain assessment for analgesic use in persons with dementia. *Pain* 2008; 134: 16–23.
106. Jackson D, Horn S, Kersten P *et al*. Development of a pictorial scale of pain intensity for patients with communication impairments: initial validation in a general population. *Clin Med (Northfield Il)* 2006; 6: 580–5.
107. McDonald D, Fedo J. Older adults pain communication: The effect of interruption. *Pain Manag Nurs* 2009; 10: 149–53.
108. McDonald D, Shea M, Fedo J *et al*. Older adult pain communication and the brief pain inventory short form. *Pain Manag Nurs* 2008; 9: 154–9.

109. Morello R, Alain J, Alix M *et al.* A scale to measure pain in non-verbally communicating older patients: The EPCA-2 study of its psychometric properties. *Pain* 2007; 15: 87–98.
110. Blomqvist K, Hallberg IR. Managing pain in older persons who receive home-help for their daily living. Perceptions by older persons and care providers. *Scand J Caring Sci* 2002; 16: 319–28.
111. Fuchs-Lacelle S, Hadjistavropoulos T. Development and preliminary validation of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC). *Pain Manag Nurs* 2004; 5: 37–49.
112. Papadopoulos A, Wright S, Ensor J. Evaluation and attributional analysis of an aromatherapy service for older adults with physical health problems and carers using the service. *Compliment Ther Med* 1999; 7: 239–44.
113. De Andrade DC, de Faria JW, Caramelli P *et al.* The assessment and management of pain in the demented and non-demented elderly patient. *Arq Neuropsiquiatr* 2010; 69: 387–94.
114. Gagliese L, Melzack R. Age differences in nociception and pain behaviours in the rat. *Neurosci Biobehav Rev* 2000; 24: 843–54.
115. Caraceni A, Cherny N, Fainsinger R *et al.* Pain measurement tools and methods in clinical research in palliative care: Recommendations of an expert working group of the European Association of Palliative Care. *J Pain Symptom Manage* 2002; 23: 239–55.
116. Chatelle C, Vanhaudenhuyse A *et al.* Pain assessment in non-communicative patients. *Rev Med Liege* 2008; 63: 429–37.
117. Chibnall J, Tait RC. Pain assessment in cognitively impaired and unimpaired older adults: a comparison of four scales. *Pain* 2001; 92: 173–86.
118. Jensen MP, Karoly P, Braver S. The measurement of clinical pain intensity: a comparison of six methods. *Pain* 1986; 27: 117–26.
119. Jensen MP, Karoly P. Self-report scales and procedures for assessing pain in adults. In: Turk DC, Melzack R, eds. *Handbook of pain assessment*. New York: Guilford, 1992; pp. 135–51.
120. Jensen MP, McFarland CA. Increasing the reliability and validity of pain intensity measurement in chronic pain patients. *Pain* 1993; 55: 195–203.
121. Closs SJ, Barr B, Briggs M, Cash K, Seers K. A comparison of five pain assessment scales for nursing home residents with varying degrees of cognitive impairment. *J Pain Symptom Manage* 2004; 27: 196–205.
122. Davies E, Male M, Reimer V, Turner M. Pain assessment and cognitive impairment: part 2. *Nurs Stand* 2004; 19: 33–40.
123. Fisher SE, Burgio LD, Thorn BE *et al.* Pain assessment and management in cognitively impaired nursing home residents: association of certified nursing assistant pain report, Minimum Data Set pain report, and analgesic medication use. *J Am Geriatr Soc* 2002; 50: 152–6.
124. Fisher SE, Burgio LD, Burgio LD, Thorn BE, Hardin JM. Obtaining self-report data from cognitively impaired elders: Methodological issues and clinical implications for nursing home pain assessment. *Gerontologist* 2006; 46: 81–8.
125. van Herk R, van Dijk M, Biemold N *et al.* Assessment of pain: Can caregivers or relatives rate pain in nursing home residents? *J Clin Nurs* 2009; 18: 2478–85.
126. Herr K. Pain in the older adult: An imperative across all health care settings. *Pain Manag Nurs* 2010; 11(2, Suppl 1): S1–S10.
127. American Society for Pain Management 2006 *Pain assessment in the non verbal patient: Position statement with clinical practice recommendations*. Available from: <http://www.aspmn.org/organization/documents/nonverbaljournalfinal.pdf> [Accessed 11.09.2017]
128. Herr K. Pain assessment strategies in older patients. *J Pain* 2011; 12(Suppl 3): S3–S13.
129. Herr K, Coyne PJ, McCaffery M *et al.* Pain assessment in the patient unable to self-report: Position statement with clinical practice recommendations. *Pain Manag Nurs* 2011; 12: 230–50.
130. Coyn PJ, McCaffery M *et al.* *Pain assessment in the patient unable to self-report*. 2011. Available from: http://www.aspmn.org/organization/documents/UPDATED_NonverbalRevisionFinalWEB.pdf [Accessed 11.09.2017]
131. Horgas A, Miller L. Pain assessment in people with dementia. *Am J Nurs* 2008; 108: 62–70.
132. Horgas AL, Nichols AL, Schapson CA, Vietes K. Assessing pain in persons with dementia: Relationships among the non-communicative patient's pain assessment instrument, self-report, and behavioral observations. *Pain Manag Nurs* 2007; 8: 77–85.
133. Horgas AL, Elliott AF, Marsiske M. Pain assessment in persons with dementia: Relationship between self-report and behavioural observation. *J Am Geriatr Soc* 2009; 57: 126–32.
134. Hutchison RW, Tucker WF Jr, Kim S, Gilder R. Evaluation of a behavioral assessment tool for the individual unable to self-report pain. *Am J Hosp Palliat Med* 2006; 23: 328–31.
135. Jowers Taylor L, Herr K. Pain intensity assessment: A comparison of selected pain intensity scales for use in cognitively intact and cognitively impaired African American older adults. *Pain Manag Nurs* 2003; 4: 87–95.
136. Kaasalainen S, Crook J. An exploration of seniors' ability to report pain. *Clin Nurs Res* 2003; 13: 199–215.
137. Kamel HK, Phlavan M, Malekgoudarzi B, Gogel P, Morley JE. Utilizing pain assessment scales increases the frequency of diagnosing pain among elderly nursing home residents. *J Pain Symptom Manage* 2001; 21: 450–5.
138. Keane RA, Williams C, O'Neil D. Pain assessment in specialist services for older people a national perspective. *Journal of the American Geriatric Society* 2010; 58: 1614–5.
139. Manfredi PL, Breuer B, Meier DE, Libow L. Pain assessment in elderly patients with severe dementia. *J Pain Symptom Manage* 2003; 25: 48–52.
140. Ni Thuathail A, Welford C. Pain assessment tools for older people with cognitive impairment. *Nursing Standard* 2011; 26: 39–46.
141. Pautex S, Michon A, Guedira M *et al.* Pain in severe dementia: Self-assessment or observational scales? *J Am Geriatr Soc* 2006; 54: 1040–5.
142. Rodriguez CS. Pain measurement in the elderly: A review. *Pain Manag Nurs* 2001; 2: 38–46.
143. Scherder E, Bouma A. Visual analogue scales for pain assessment. *Alzheimer's disease. Gerontology* 2000; 46: 47–53.
144. Scherder E, Bouma A, Borkent M, Rahman O. Alzheimer patients report less pain intensity and pain affect than non-demented elderly. *Psychiatry* 1999; 62: 265–72.
145. Scherder E, Slaets J, Deijen J *et al.* Pain assessment in patients with possible vascular dementia. *Psychiatry* 2003; 66: 133–45.

146. Soscia J. Assessing pain in cognitively impaired older adults with cancer. *Clin J Oncol Nurs* 2003; 7: 174–7.
147. Streffer ML, Buchi S, Mörgeli H, Galli U, Ettlin D. PRISM (pictorial representation of illness and self-measure): a novel visual instrument to assess pain and suffering in orofacial pain patients. *J Orofac Pain* 2009; 23: 140–6.
148. Tsai PF, Richards K. Using an osteoarthritis-specific pain measure in elders with cognitive impairment: a pilot study. *J Nurs Manag* 2006; 14: 90–5.
149. DeWaters T, Faut-Callahan M, McCann JJ *et al.* Comparison of self-reported pain and the PAINAD scale in hospitalized cognitively impaired and intact older adults after hip fracture surgery. *Orthop Nursing* 2008; 27: 21–8.
150. Weiner D, Pieper C, McConnell E *et al.* Pain measurement in elders with chronic low back pain: traditional and alternative approaches. *Pain* 1996; 67: 461–7.
151. Wheeler MS. Pain assessment and management in the patient with mild to moderate cognitive impairment. *Home Healthc Nurse* 2006; 24: 354–9.
152. While C, Jocelyn A. Observational pain assessment scales for people with dementia: a review. *Br J Community Nurs* 2009; 14: 438–42.
153. Wynne CF, Ling SM, Remsburg R. Comparison of pain assessment instruments in cognitively intact and cognitively impaired nursing home residents. *Geriatr Nurs* 2000; 21: 20–3.
154. Zwakhalen SM, Hamers JP, Berger MP. The psychometric quality and clinical usefulness of three pain assessment tools for elderly people with dementia. *Pain* 2006; 126: 210–20.
155. Kaasalainen S, DiCenso A, Donald F, Staples E. Optimizing the role of the nurse practitioner to improve pain management in long-term care. *West J Nurs Res* 2007; 29: 561–80.
156. Adams J, Cheng P, Deonarin L *et al.* Extinction of care-induced vocalizations by a desensitization routine on a palliative care unit. *Am J Hosp Palliat Med* 2012; 29: 318–20.
157. Agüera-Ortiz L, Failde I, Cervilla JA, Mico JA. Unexplained pain complaints and depression in older people in primary care. *J Nutr Health Ageing* 2013; 17: 574–7.
158. Andersson G. Chronic pain in older adults: A controlled pilot trial of a brief cognitive-behavioural group treatment. *Behav Cogn Psychother* 2012; 40: 239–44.
159. *Baker TA, Buchanan NT, Small BJ, Hines RD, Whitfield KE. Identifying the relationship between chronic pain, depression and life satisfaction in older African Americans. *Gerontology* 2011; 33: 426–43.
160. *van Baarsen B. Suffering, loneliness, and the euthanasia choice: an explorative study. *J Soc Work End Life Palliat Care* 2009; 4: 189–213.
161. Bergh I, Steen G, Waern M *et al.* Pain and its relation to cognitive function and depressive symptoms: A Swedish population study of 70-year-old men and women. *J Pain Symptom Manag* 2003; 26: 903–12.
162. Bunting-Perry L (2010) Pain in Parkinson's disease: Characteristics and responses in ambulatory care patients. *Dissertation Thesis – University of Pennsylvania*.
163. Carrington Reid M, Williams CS, Concato J, Tinetti ME, Gill TM. Depressive symptoms as a risk factor for disabling back pain in community-dwelling older persons. *J Am Geriatr Soc* 2003; 51: 1710–7.
164. Catananti C, Gambassi G. Pain assessment in the elderly. *Surg Oncol* 2010; 19: 140–8.
165. Chan WCH, Kwan CW, Chi I, Chong AML. The impact of loneliness on the relationship between depression and pain of Hong Kong Chinese terminally ill patients. *J Palliat Med* 2014; 17: 527–32.
166. Chan WCH, Kwan CW, Chi I. Moderating effect of communication difficulty on the relationship between depression and pain: a study on community-dwelling older adults in Hong Kong. *Aging Ment Health* 2015; 19: 829–34.
167. Craft L, Prahlow JA. From fecal impaction to colon perforation. *Am J Nurs* 2011; 111: 38–43.
168. Docking RE, Fleming J, Brayne C, Zhao J, Macfarlane GJ, Jones GT. Epidemiology of back pain in older adults: Prevalence and risk factors for back pain onset. *Rheumatology* 2011; 50: 1645–53.
169. Hairi NN, Cumming RG, Blyth FM, Naganathan V. Chronic pain, impact of pain and pain severity with physical disability in older people – Is there a gender difference? *Maturitas* 2013; 74: 68–73.
170. *Hart-Johnson TA, Green CR. Physical and psychosocial health in older women with chronic pain: comparing clusters of clinical and nonclinical samples. *Pain Med* 2010; 11: 564–74.
171. Hartvigsen J, Christensen K. Pain in the back and neck are with us until the end: a nationwide interview-based survey of Danish 100-year-olds. *Spine* 2008; 33: 909–13.
172. Hong EP, Margaret O, Leng CY, Kannuasamy P. The lived experience of older Chinese Singaporeans with life-threatening illnesses in an inpatient hospice. *Progress Palliat Care* 2012; 20: 19–27.
173. Hoover DR, Siegel M, Lucas J, Kalay E, Gaboda D, Devanand DP. Depression in the first year of stay for elderly long-term residents in the USA. *Int Psychogeriatr* 2010; 22: 1161–71.
174. Huang Y, Carpenter I. Identifying elderly depression using the Depression Rating Scale as part of comprehensive standardised care assessment in nursing homes. *Ageing Ment Health* 2011; 15: 1045–51.
175. Jacobs JM, Hsmerman-Rozenberg R, Cohen A, Stessman J. Chronic back pain among the elderly: Prevalence, associations and predictors. *Spine* 2006; 31: 203–7.
176. Lavin R, Park J. Depressive symptoms in community-dwelling older adults receiving opioid therapy for chronic pain. *J Opioid Manag* 2011; 7: 309–19.
177. *McNamara P, Stavitsky K, Harris E, Szent-Imrey O, Durso R. Mood, side of motor symptom onset and pain complaints in Parkinson's disease. *Int J Geriatr Psychiatry* 2010; 25: 519–24.
178. Mueller CA, Lielke RK, Penner E, Junius-Walker U, Hummers-Pradier E, Theile G. Disclosure of new health problems and intervention planning using a geriatric assessment in a primary care setting. *Fam Med* 2010; 51: 93–500.
179. Mystakidou K, Parpa E, Tsilika E *et al.* Geriatric depression in advanced cancer patients: The effect of cognitive and physical functioning. *Geriatr Gerontol Int* 2013; 13: 281–8.
180. *Sun X, Lucas H, Meng Q, Zhang Y. Associations between living arrangements and health-related quality of life of urban elderly people: A study from China. *Qual Life Res* 2011; 20: 59–369.
181. Tsatali M, Gouva M. The impact of pain anxiety on chronic pain among elders. *Eur Psychiatry* 2011; 26: 1006.
182. *Tse M, Leung R, Ho S. Pain and psychological well-being of older persons living in nursing homes: an exploratory

- study in planning and patient-centred intervention. *J Adv Nurs* 2011; 68: 312–21.
183. *Vanková H, Holmerová I, Andel R, Veleta P, Janecková H. Functional status and depressive symptoms among older adults from residential care facilities in the Czech Republic. *Int J Geriatr Psychiatry* 2008; 23: 466–71.
184. Weaver GD, Kuo Y, Raji MA *et al.* Pain and disability in older Mexican-American adults. *J Am Geriatr Soc* 2009; 57: 992–9.
185. *Wu B, Chi I, Plassman BL, Guo M. Depressive symptoms and health problems among Chinese immigrant elders in the US and Chinese elders in China. *Aging Ment Health* 2010; 14: 695–704.
186. Wylde V, Hewlett S, Learmonth ID, Dieppe P. Persistent pain after joint replacement: Prevalence, sensory qualities and postoperative determinants. *Pain* 2011; 152: 566–72.
187. Zarit SH, Griffiths PC, Berg S. Pain perceptions of the oldest old: A longitudinal study. *Gerontologist* 2004; 44: 459–68.
188. Brown C. Pain in communication impaired residents with dementia: Analysis of Resident Assessment Instrument (RAI) data. *Dementia* 2010; 9: 375–89.
189. Chang SO, Younjae OH, Park EO, Geun Myun Kim GM, Kil SY. Concept analysis of nurses' identification of pain in demented patients in a nursing home: Development of a hybrid model. *Pain Manag Nurs* 2011; 12: 61–9.
190. Cohen-Mansfield J. Pain Assessment in Non-communicative Elderly persons – PAINE. *Clin J Pain* 2006; 22: 569–75.
191. Curtiss C. Challenges in pain assessment in cognitively intact and cognitively impaired older adults with cancer. *Oncol Nurs Forum* 2010; 37: S7–16.
192. Delac K. Pain assessment in patients with cognitive impairment is possible. *Top Emerg Med* 2002; 24: 52–4.
193. De Waters T. An evaluation of clinical tools to measure pain in older people with cognitive impairment. *Br J Community Nurs* 2003; 8: 226–34.
194. De Waters T, Faut-Callahan M, McCann JJ *et al.* Comparison of self-reported pain and the PAINAD scale in hospitalized cognitively impaired and intact older adults after hip fracture surgery. *Orthop Nurs* 2008; 27: 21–8.
195. Epperson M, Bonnell W. Pain assessment in dementia: Tools and strategies. *Clin Excell Nurse Pract* 2004; 8: 166–71.
196. Ersek M, Herr K, Neradilek M *et al.* Comparing the psychometric properties of nonverbal pain behaviours (CNPI) and the pain assessment in advanced dementia (PAIDAD) instruments. *Pain Med* 2010; 11: 395–404.
197. Feldt K. Examining pain in aggressive cognitively impaired older adults. *J Gerontol Nurs* 1998; 24: 14–22.
198. Feldt K. The complexity of managing pain for frail elders. *J Am Geriatr Soc* 2004; 52: 840–1.
199. Herr K. Pain in the older adult: An imperative across all health care settings. *Pain Manag Nurs* 2010; 11: S1–S10.
200. Herr K, Garand L. Assessment and measurement of pain in older adults. *Clin Geriatr Med* 2001; 17: 457–8.
201. Herr K, Bjoro K, Decker S. Tools for assessment of pain in non-verbal older adults with dementia: A state of the science review. *J Pain Symptom Manag* 2006; 31: 170–92.
202. Herr K, Bursch H, Ersek M, Miller L, Swafford K. Use of pain-behavioral assessment tools in the nursing home expert consensus recommendations for practice. *J Gerontol Nurs* 2010; 36: 18–29.
203. Hsu KT, Shuman SK, Shuman SK, Hamamoto DT, Hodges JS, Feldt KS (2007) *The application of facial expressions to the assessment of orofacial pain in cognitively impaired older adults.* Available from: <http://www.ncbi.nlm.nih.gov/pubmed/?term=Hsu+dental+pain+2007> [Accessed 11.09.2017]
204. Husebo B, Strand L, Nilssen R *et al.* Mobilization-Observation-Behavior-Intensity Dementia pain scale (MOBID): Development and validation of a nurse-administered pain assessment tool for use in dementia. *J Pain Symptom Manag* 2007; 34: 67–80.
205. Jordan A, Regnard C, O'Brien JT, Hughes JT. Pain and distress in advanced dementia: Choosing the right tools for the job. *Palliat Med* 2012; 26: 873–8.
206. Kaasalainen S, Crook J. An exploration of seniors' ability to report pain. *Clin Nurs Res* 2004; 13: 199–215.
207. Kunz M, Scharmann S, Hemmeter U, Schepelmann K, Lautenbacher S. The facial expression of pain in patients with dementia. *Pain* 2007; 133: 221–8.
208. Lucas A, Schular M, Fischer TW *et al.* Pain and dementia. A diagnostic challenge. *Gerontol Geriatr* 2012; 45: 45–9.
209. Mahoney A, Peters L. The Mahoney Pain Scale: Examining pain and agitation in advanced dementia. *Am J Alzheimer's Dis Other Dement* 2008; 23: 250–61.
210. Manz B, Mosier R, Nusser-Gerlach MA *et al.* Pain assessment in the cognitively impaired and unimpaired elderly. *Pain Manag Nurs* 2000; 1: 106–15.
211. Mezinskas PN, Keller AW, Schmidt Luggen A. Assessment of pain in the cognitively impaired older adult in long-term care. *Geriatr Nurs (Minneapolis)* 2004; 25: 107–12.
212. Ni Thuathail A, Welford C. Pain assessment tools for older people with cognitive impairment. *Nurs Stand* 2011; 26: 39–46.
213. 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.
214. Zwakhlen S, Hamers J, Huijjer H, Abu-Saad Martijn P, Berger F. Pain in elderly people with severe dementia: A systematic review of behavioural pain assessment tools. *BMC Geriatr* 2006; 6. <http://www.biomedcentral.com/content/pdf/1471-2318-6-3.pdf>. [Accessed 11.09.2017].
215. Zwakhlen SM, Hamers JP, Berger MP *et al.* Improving the clinical usefulness of a behavioural pain scale for older people with dementia. *J Adv Nurs* 2006; 58: 493–502.
216. Royal College of Physicians, British Geriatrics Society and British Pain Society *The assessment of pain in older people: national guidelines.* Concise guidance to good practice series, No 8. London: Royal College of Physicians. 2007. Available from <http://www.rcplondon.ac.uk/sites/default/files/concise-assessment-of-pain-in-older-people-2007.pdf> [Accessed 11.04.2017]
217. Hadjistavropoulos T. Pain in older persons. *Pain Res Manag* 2007; 12: 176.
218. Closs SJ, Dowding D, Allcock N *et al.* (2016) Towards improved decision support in the assessment and management of pain for people with dementia in hospital: a systematic meta-review and observational study. *Health Services and Delivery Research* 4 (30).
219. Abdulla A, Adams N, Bone M *et al.* Guidance on the management of pain in older people. *Age Ageing* 2013; 42 (Suppl. 1): 1–57.

I9. Appendices

Available in *Age and Ageing* online.