

**The Assessment of Pain in Older People:
National Guidelines 2nd edition**

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DRAFT FOR CONSULTATION

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 published in 2007 has now been updated and highlights a number of changes within the literature, practice and research which will be outlined in the following sections.

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 PAINAD and Doloplus are recommended.
8. PAINAD and Doloplus 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.

Patricia Schofield has received honoraria for acting as a speaker and advisor to Napp Pharmaceuticals.

Timetable

Dissemination; These guidelines will be distributed to all stakeholders as described in the *Publication Process Manual* (BPS 2010) 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*.

Review of 2nd edition to commence: March 2019

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Reissue date: Anticipated: November 2017

Foreword

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. The original guidelines published back in 2007 have been updated and amended according to the latest evidence and should therefore be adopted widely.

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1. 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
Neuropathic pain	Pain initiated or caused by a primary lesion or dysfunction in the peripheral or central nervous system
Ontological	The philosophical study of the nature of being, becoming, existence or reality, as well as the basic categories of being and their relations
Pain descriptive tools	Tools that use a numeric or set of words to assess the nature of pain (pattern, nature and intensity)
Persistent pain	Pain that lasts a month or more beyond the usual expected recovery period or illness, or goes on for years (non-malignant)
Self-rated disability	A patient related report of health, function and disability

Titration

The gradual increase/decrease of medication to reduce or eliminate pain while allowing the body to accommodate the side effects or toxicity (RNAO 2007).

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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

Centre for Epidemiological Studies Depression scale (CES-D) A screening test for depression

Checklist of Non-verbal Pain Indicators (CNPI) A summation score of pain behaviours at rest and on movement

Clinical Dementia Rating scale (CDR) A tool that stages the severity of dementia

Colour Analogue Score (CAS) A vertical numerical pain rating scale ruler with slide

Colour Pain Analogue Scale (CPAS for pain intensity) A wedge shaped coloured vertical numerical pain rating scale anchored by descriptors with a slider marker

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 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) A 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 1 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

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 x 2 x 1 inches. Two pain tools are located on the POM: a 10cm 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-PR1a) The score from the affective section of the McGill Pain Questionnaire

Pain Rating Index mixed (MPQ-PR1m) The score from the mixed section of the McGill Pain Questionnaire

Pain Rating Index somatosensory (MPQ-PR1s) 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 10cm 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

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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.

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4. Methodology

The overall methodology for this assessment document follows the procedures in the British Pain Society *Publication Process Manual* (BPS 2010).

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 (SIGN 2011).

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 (NHMRC 1999a). 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 (Liddle et al 1996).

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 (NHMRC1999b) levels of evidence (see Table 1), and these recommendations were further confirmed through agreement between two reviewers.

**Table 1 Levels of evidence
(according to the NHMRC* designation 1999b)**

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, 2 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

* National Health and Medical Research Council (1999b) *A guide to the development, implementation and dissemination of clinical practice guidelines*. Commonwealth of Australia, Canberra. Reproduced by permission

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” (Merskey & Bogduk 1994). 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 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% (Elliott In: Schofield (ed) 2013). 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, 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 (RCP 2007). 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 guidelines seek to update the original document 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. This guidance will be updated in three to five years.

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]

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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* (Abdulla et al 2013), 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. Dionne et al (2006) 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 (2007) who reported that the onset of pain that interferes with everyday life continues to increase with age.

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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 (2013).

8. Communication

Carlos Moreno-Leguizamon 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 (Carr 1997; Haskard-Zolnierik 2012).

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) (Blomqvist & Hallberg 2001). There are difficulties when health professionals conceptualise the process of communication as only verbal communication (Araujo Machado 2006). 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 (Hadjistavropoulos et al 2011). 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 (Blomqvist & Hallberg 2001; Blomqvist 2003; Carr 1997; Hadjistavropoulos et al 2011).

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 (2011) 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 (Hadjistavropoulos et al 2011). Similarly, McDonald et al (2009) 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 (De Rond et al 2000) 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 (2011) 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.

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9. Interpersonal interaction in pain assessment

Jonathon Davies and Sonia Cottom

Assessing pain in older adults is complex (Horgas & Dunn 2001; **Level III-2**) and in many cases, a lack of caregiver (Martin et al 2005; **Level III-2**; van Herk et al 2009; **Level III-2**) and family knowledge (Hall-Lord et al 2002; **Level III-1**) results in half of those living in pain continuing to do so (Bradford et al 2012; **Level III-2**) for longer than necessary, due to a lack of early detection (Cheung & Choi 2008; **Level III-1**). This failure effectively to identify and manage pain results in a reduced quality of life (Ghafoor 2003; **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 (Couilliot et al 2012; **Level IV**; Bradford et al 2012; **Level III-2**).

For specific groups, such as communicative or non-communicative nursing home residents, pain is often not detected (Hall-Lord et al 2002; **Level III-1**) and older people with cognitive impairment have reported more intense pain than their cognitively intact counterparts (Allen et al 2002; **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 (Shega et al 2006; **Level III-2**). It has been suggested that approaches to measuring pain should be multi-dimensional (van Herk et al 2009; **Level III-2**) including attempts of self-reported pain for seniors with mild to moderate dementia (Martin et al 2005; **Level III-2**).

Structured pain education should become a standard training (Ferrell et al 1994; **Level II**), including for nursing assistants (Horgas & Dunn 2001; **Level III-2**), to support caregivers in correctly assessing chronic pain in older people and learning how to alleviate it through pharmacological (Ghafoor 2003; **Level III-2**) and non-pharmacological interventions (Couilliot et al 2012; **Level IV**). Pain assessment tools should be congruent with the educational levels of those being asked to complete them (Johnson et al 2011; **Level IV**) and further training to understand verbal and non-verbal communication (Hall-Lord et al 2002; **Level III-1**) particularly when working with patients with dementia (Mentes et al 2004; **Level III-2**) should be provided. Systematic records of patient experiences of pain should also be kept (Martin et al 2005; **Level III-2**) to help improve continuity of care for older people transferred across settings (Johnson et al 2011; **Level IV**) and for information transferred between staff and family (Hall-Lord et al 2002; **Level III-1**; Buffum & Haberfelde 2007; **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 (Pautex et al 2005; **Level III-2**, Phillips 2007) although there are reports of fair agreement between self-report and proxy reports of pain in patients with cognitive impairment associated with dementia (Jensen-Dham et al 2012; **Level II**, Leong et al 2006; **Level IV**). That the patient self-report is the most reliable and accurate is true even for patients with impaired cognition (Stolee et al 2005; Pautex et al 2006). 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. Re-wording 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 (Zwakhalen et al 2007; **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 (Manz et al 2000) and there is evidence that supports the

assessment being performed by someone who knows the patient well (Gregory 2011; **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 (Phillips 2007; **Level III**, McAuliffe et al 2008).

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.

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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 (Brown 2004; **Level I**). Furthermore, severe cognitive impairment and speech difficulties are also well documented barriers to pain assessment (Cohen-Mansfield 2005; **Level IV**, Bloomqvist & Hallberg 1999; **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 (Brown 2004; **Level I**, Yi-Heng et al 2010; **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 (Zwakhalen et al 2007; **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 (Brown 2004; **Level I**, Cadogan et al 2005; Kaasalainen et al 2007; **Level IV**, Layman et al 2006; **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 (Gregory & Haigh 2007; Clark et al 2006; **Level III-3**, Bloomqvist & Hallberg 1999; **Level IV**, Mrozek & Steble Werner 2001; **Level IV**, Weiner and Rudy 2002; **Level IV**, Yun-Fang et al 2004; **Level IV**, Zwakhalen et al 2007; **Level IV**).

Furthermore, daily recording of pain improves comparison of pain and pain management (Liu et al 2012; **Level IV**) and nursing home staff should consider self-report as their initial assessment tool (Jones et al 2005; **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.

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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 (Hadjistavropoulos et al 2007; **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 (2007) 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 (2007) 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 WHODAS 2.0 (Ustun et al 2010). 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 (Hadjistavropoulos et al 2007) 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 (Menz et al 2006; **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 (Roddy et al 2009; **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 (Ong et al 2006). 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 2013). 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 (Wand et al 2009). Therefore, in assessment of an individual any self-report measures should be used alongside a thorough physical examination (Hadjistavropoulos et al 2007).

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

Rachael Docking & Louise Tarrant

The literature search (Jan 1990- April 2017) identified 5766 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: MPI, PAIRS, MPQ, PRI, BPI (and in some cases: interRAI LTCF, STEP, ODI, and items from SF-36). The self-report assessment tools for mood most commonly used were: GDS, CES-D, DRS, DASS (and in some cases: PASS, HADS, ASI, CAMDEX, PVS, and selected items from K6, 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.

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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 (Rainfray et al 2003; Keane et al 2010; Gnass et al 2012) involved surveys of the staff and perceived barriers to pain assessment implementation. Rainfray et al (2003) surveyed 221 hospital staff in France regarding the use of the Doloplus scale. Whilst Keane et al (2010) surveyed 58 consultant geriatricians in Ireland regarding the use of a number of scales (NRS, VAS, VRS, NRS, 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 (Manias et al 2011; **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, in 2007 we identified a total of 12 scales (Abbey, PAINAD, Pacslac, DisDat, Pade, Paine, Doloplus, NoPain, CNPI, ADD, 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 (Bruce 2017).

There have been a number of studies which have further explored the Doloplus scale (Pautex et al 2006; **Level I+**, Holen et al 2007; **Level II+**, Rainfray et al 2003; **Level II**, Hutchison et al 2006; **Level II+**, Pickering 2010; **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 (Cheung & Choi 2008; **Level II+**, Schiepersa et al 2010; **Level II**, Zwakalen et al 2012; **Level II**, Lints-Martindale et al 2011; **Level II+**) and PAINAD (Horgas & Miller 2008; **Level III**, Jordon et al 2009; **Level III**, Lane et al 2003; **Level III**, DeWaters 2008; **Level III**). The Pacslac scale has good inter-rater reliability (Cheung & Choi 2008; **Level II+**), is the scale most valued by nurses (Zwakalen et al 2012; **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 (Jordon et al 2009; **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 BME groups.

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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 (1992) *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 (AGS 1998). This was updated in 2002 (AGS 2002). Both versions concentrated on the assessment of pain and its pharmacological management.

The guidelines put forward by the AGS (2002) 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 (AGS 2009). 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 (Hanlon et al 2009). 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 (Herr et al 2006).

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 (Chou et al 2009). 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 (AGS 2009) 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* (APS 2005). 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* (Edith Cowan University 2007) has been designed to be used with the Australian Pain Society's document (APS 2005) to assist in the implementation of best practice for pain management in aged care facilities.

The APS document (2005) 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 (RCP et al 2007). 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 (RCP et al 2007).

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 (BGS 2013). The document is separated into sections addressing pharmacology, interventional therapies, psychological interventions, physical activity and assistive devices and complementary therapies.

Spain

Spanish geriatricians typically rely on the American Geriatrics Society (AGS) Panel on Persistent Pain in Older Persons guideline (AGS 2002) 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 Geriátría y Gerontología (SEGG) has published two booklets with recommendations on pain management in older people (Sociedad 2001, 2012; Ducloux et al 2013), but these are not used widely either.

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 (Borlion & Lecart 2010). Many hospitals and nursing homes have developed their own tools and standards. These are mostly locally available and not widely known.

Switzerland

According to Pautex et al (2013) 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 (Pautex et al 2013).

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 (Allaz et al 2011).

DRAFT FOR CONSULTATION

16. Acknowledgements

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DRAFT FOR CONSULTATION

17. Matrices

17.1. Attitudes and beliefs

N/A

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17.2. Communication

Author(s), Date	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
Bagnara et al 2009	To analyse the prevalence of persistent pain in the elderly and estimate its impact on patients' usual daily activities and depression symptoms.	227 patients or their caregivers filled in a questionnaire about the presence of pain and its impact on functional autonomy. Further information was gathered from the charts. Three months later, patients and caregivers underwent a follow-up evaluation by phone interview.	75% of patients reported persistent pain, occurring daily in 70% of subjects. Average intensity was 6.5 (on a 0-10 range). It affected patients' common daily activities and was associated with depressive symptoms. 52% of patients did not use analgesics; NSAIDs were the most common class of analgesics (16%). The lower prevalence of pain among patients with dementia is likely to be associated with undervaluation by caregivers. Pain and depression did not correlate, whilst a greater use of antidepressants (SSRI) was observed among patients without pain.	Highlights communication as an important issue (diagnoses, medication) particularly in patients with dementia.	Statistical measurements were very general and limited.	This study asserts that pain and depression do not correlate. However, since the article is in Italian, it is very difficult to understand the details.
Belin & Gatt 2006	To review the literature on how dementia and pain are associated.	Literature review	The literature review shows that pain in dementia is under-diagnosed and consequently undertreated. This may be linked to: 1) the difficulty of pain assessment in patients with cognitive disorders and altered communication skills; 2) changes in pain processing, especially in the motivational-affective domain; 3) modified efficacy of analgesic drugs.	Highlights the need to document pain in all types of dementia.	This is not primary research.	Pain has been documented in Alzheimer's disease but remains to be investigated in the other types of dementia in order that all patients can be treated whatever their diagnosis, illness duration and type of pain (acute versus chronic). The original is in French.
Blomqvist 2003	To explain nursing and paramedic perceptions of pain.	Qualitative interviews with 52 members of staff.	Staff perceived pain as: i) real ii) exaggerated iii) trivial	Highlights the need to educate nurses in terms of their values and how to address	No particular limitations	Medicalised view of pain can result in stereotyping and poor management of pain in older people.

Author(s), Date	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
			<p>iv) care-related v) endured vi) concealed, self-caused or unarticulated.</p> <p>Only the patients who were perceived as enduring their pain evoked satisfaction while the other groups were perceived as frustrating. The nurses' attitudes towards pain were subjective and judgemental.</p>	<p>older people who do not complain and those who complain a lot. Also, how to deal with people who cannot communicate. Demonstrates how professionals in some cases operate based on stereotypes.</p>		<p>Attitudes of health professionals influence management strategies of pain, and this should be considered in training.</p>
Blomqvist & Hallberg 2001	To assess pain in older adults/ cognitively normal/ cognitively impaired.	A mixed study of qualitative observations of those who are impaired and open-ended questions with those who are cognitively normal. Random sample of 66 older adults using structured and open-ended questionnaires.	Most older adults are in pain but often they do not feel able to express it.	<p>Highlights the need for nurses to observe and help people articulate pain both verbally and non-verbally. In particular it demonstrates the difficulty of assessing people who are cognitively impaired in terms of their pain.</p>	<p>Statistical measurements were very limited because the sample size was very small (n1= 19 cognitively normal n2= 24 cognitively impaired). The statistical measures were unhelpful.</p>	<p>This research tries to develop a structure for the assessment of pain, particularly with those who are impaired cognitively.</p>
Boorsma et al 2011	To measure the outcomes of multidisciplinary integrated care in residential homes.	Cluster randomised controlled trial of 10 residential homes. The average number of residents in each home was 46. One group of 5 was provided with multidisciplinary integrated care and the other 5 were not.	Multidisciplinary meetings and on-going care improved the quality of care for the 5 ones providing integrated care.	Highlights the need for a systematic multi-disciplinary approach in residential homes.	<p>This research does not clarify who the professionals of the multidisciplinary team should be or who they were. Also, it does not clarify the logistical problems of multidisciplinary teams working together.</p>	<p>Unsurprising results but nevertheless quantifies the fact that quality of care requires monitoring.</p>
Carnes & Underwood 2008	To explore patients' communication of pain.	In-depth interviews with 13 people.	People described pain in functional terms rather than in clinical symptomatic terms.	Highlights the need to obtain patients' subjective experiences of pain.	Although the researchers argue that this research is phenomenological and ethno-methodological, this is not	Demonstrates the gap in communication between professionals and patients.

Author(s), Date	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
					demonstrated in their findings.	
Carr 1997	To design, pilot and evaluate a pain assessment tool.	Pilot study for two weeks in a mixed rehabilitation ward.	None of the nurses gave attention to the tool due to their medicalised view of pain.			Professionals need training in the concept of pain and pain management.
Cohen-Mansfield & Lipson 2008	An open medication study with a medication protocol. Three comparison groups.	Examines the ability of different assessments to detect pain and monitors pain scores after medication.	All participants who followed the pain protocol reached a pain free stage by the study criteria.	Unable to conduct RCT so used other comparison groups.	Small sample (n=121). High refusal rate.	The results present a methodology that caregivers can use to increase the detection of pain in persons with dementia.
De Rond et al 2000	To overcome the main barriers regarding communication, assessment and documentation of pain by nurses through the implementation and evaluation of a Pain Monitoring Program for Nurses.	Quasi-experimental design with a non-equivalent control group of 703 patients (358 in the control group and 345 in the intervention group) in three Dutch hospitals.	The majority of patients were female (58.5%), the mean age was 59.5 years. 53.1% of the patients had cancer, and 55% had undergone surgery. The majority of patients (56.6%) reported pain in the abdominal region. Older patients communicate less with nurses and physicians about pain, and nurses document less about pain in nursing records of older patients compared with younger ones.	Statistical and systematic study.	The patients were not selected randomly.	The Pain Monitoring Program consisting of the daily use of a rating scale in patients and education for nurses in pain assessment and management proved to be effective in improving nurses' assessment of patients' pain and documentation. Communication about pain between patients and nurses, and between patients and physicians did not improve as a result of the Pain Monitoring Program. Patients in the study apparently did not consider the use of the daily scale as proper communication about pain.
Hadjistavropoulos et al 2011	To present a framework for understanding the numerous and complicated interactions among psychological and social determinants of pain through examination of the	This is a long and detailed theoretical study proposing a communication model. It is not an empirical research study.	Fine-grained consideration of social transactions during pain leads to an appreciation of socio-behavioural events affecting both suffering persons and caregivers.	Highlights historical and social elements of the pain experience, taking into account the interactions between those in pain and their caregivers.	Only a theoretical study suggesting a communication model.	The knowledge and discussion presented in this essay come from the integration of various disciplines and perspectives such as clinical health psychology, social and developmental processes, evolutionary psychology, communications studies and behavioural neuroscience.

Author(s), Date	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
	process of pain communication.					
Haskard-Zolnierik 2012	To develop a reliable 47-item physician-patient communication rating scale about pain for use with audio-taped medical visit interactions. To provide the validity evidence for this scale on the basis of its correlations with additional raters' assessments of the global affect in the interaction and ability to discriminate between high- and low-pain patients.	Statistical study using descriptive statistics.	A scale to rate physician-patient communication about pain was developed. The reliable scale composites were computed and some evidence for known group differences and concurrent validity was demonstrated.	Highlights the significance of pain in a primary care setting.	The study does not provide a definition of communication. It seems the study focused only on verbal communication. Although the study uses an existing data set of audio-taped physician-patient interactions, it does not clarify whether physicians and patients were aware that their interactions were being recorded.	The scale shows partial evidence of reliability and two forms of validity.
Jackson et al 2006	Validation of the SPIN scale.	72 participants were asked to record pain on the SPIN scale.	Testing the scale in out-patients departments with participants aged 23-87 years.		Small study. More research needed in adults with cognitive or communication impairments.	Some found the SPIN helpful.
Jorge & McDonald 2011	To describe how Hispanic older adults communicate pain information, including the amount of pain information and communication process employed.	This study was a secondary analysis of 24 older adults with a descriptive design. The data were from a larger primary study that tested the effect of practitioner pain-question-phrasing on the amount of pain information described by older	Most of the participants were women. Participants described a mean of 5.5 (SD 3.39) items of pain information. Further, the majority stayed on topic, and half of them spoke clearly and explicitly. Participants described location, intensity and time when asked to describe their pain. Similarity in the experience of pain in general may transcend cultural differences.	Highlights cultural elements related to minority groups and addresses how they can be ignored when compared to other majority groups in the USA.	Non-verbal communication was included in this study. The findings are not related to face-to-face interactions.	Hispanic older adults with osteoarthritis pain concisely described clinically important pain information when given the opportunity to do so, including their own way of talking about it.

Author(s), Date	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
		adults with osteoarthritis pain.				
Machado & Bretas 2006	To identify which mechanisms are used by elderly patients to express pain when they are not able to use verbal communication.	Hermeneutic interpretation of accounts and semi-structured interviews with only 6 nurses working in a clinical service unit dedicated to the treatment of the elderly at a hospital in São Paulo.	Data were grouped together in selected analytical categories related to pain and communication, which showed that nurses' interactions with patients reveal attitudes and changes. The prompt interpretation and identification of these cues and symptoms of pain lead to better nursing care.	The study uses a hermeneutic approach to make the interpretation and it is not just an empirical study.	This is very small sample.	Although the nurses capture the non-verbal communication, it seems they did not relate this directly to the pain process. The original article is in Portuguese.
McDonald & Fedo 2009	To test the ability of older adults to respond to pain questions using interruptions.	Non-randomised two group design (n=312). 96 in interrupted group; 216 in non-interrupted group.	Use of computer screen questions around pain. One group interrupted by auditory sounds.		Good sample size, but un-equivalent groups	Interruption diminishes the amount of important pain communication given by older adults.
McDonald et al 2008	To test the use of open ended questions in terms of assisting older adults to express their pain using BPI.	Randomized controlled trial (n=106) older adults with osteoarthritis pain.	Assigned either open questions followed by Brief Pain Inventory (BPI) or BPI followed by open questions.		Small sample size.	Use of open questions helped older adults respond to BPI. This was a significant result.
McDonald et al 2009	How question phrasing and interruption impacts communication about pain in older adults	A post test double blind experiment	Older adults assigned to one of three conditions in terms of pain phrasing questions: Open ended questions; Closed ended questions; Social desirability.	Good sample size.		Phrasing significantly impacted the amount of important information provided by older adults.
Morello et al 2007	To test a newly developed scale with adults who are unable to communicate their pain.	Validation study.	The internal structure of the scale was consistent, inter-rater reliability good, internal consistency highly satisfactory and responsiveness good.	A large study of 340 patients in many subgroups (dementia, cancer, arthritis etc).	Another scale development.	May provide a useful scale for pain assessment.

17.3. Interpersonal interaction in pain assessment

Author(s), date, country	Setting	Method	n	Assessment tool used	Overview	Recommendations
Allen et al 2002 USA	In-home hospice care	Clinical trials	176 care recipients and 176 primary caregivers	Assessment information from the older person and caregiver were collated. Interviews were conducted no more than 48 hours after admission to the hospice.	Pain reports by older hospice cancer patients and family care-givers.	Care recipients with cognitive impairment reported more intense pain than their cognitively intact counterparts. Cognitive impairment was associated with greater discrepancy between the pain reports of care recipients and their own family caregivers.
Blomqvist & Hallberg 2002 Sweden	Care homes		94 people (aged 75+) in persistent pain were compared with 52 care providers	Personal Interviews regarding pain management treatment received.	Managing pain in older persons who receive home-help for their daily living. Perceptions by older persons and care providers.	Most common provision of pain management was medication, rest and distraction. Suggested that many of these older people were averse to trying any new pain management methods. Overall, the study implies a need for care providers to make sure that the choice of methods of pain management is not biased by stereotyping attitudes towards older persons.
Bradford et al 2012 USA	Nursing home	10 day study following a staff education presentation	89 residents across 6 facilities	Study	Managing pain to prevent aggression in people with dementia: A non-pharmacologic intervention.	Only half of people with pain receive treatment. Pain is associated with mood disturbance and it comes down to teaching caregivers to recognise the signs of pain which in turn should help to control the aggression as they lack the skills to assess pain. Greater focus on pain management may help to reduce aggression and inform treatment goals.
Buffum & Haberfelde 2007 USA	All care settings	Anonymous survey with caregivers	34		Considers continuity of pain management for older people with dementia who move across care settings. Pain detection and treatment a problem when moving to a new health care environment.	Limited numbers in study but findings support other studies reporting need for better communication between staff, improved knowledge of staff to share with family caregivers and staff to ascertain from family history of pain.

Author(s), date, country	Setting	Method	n	Assessment tool used	Overview	Recommendations
Cheung & Choi 2008 New Zealand	Observational study during usual care setting	Study period of 2 days	50 patients from 4 dementia care facilities with 12 caregivers	Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) rating was completed by medical undergraduate researcher and caregiver.	Use of PACSLAC by caregivers in dementia care facilities.	Early detection of pain is beneficial and a wider area of research is needed to accurately compare and draw findings.
Couilliot et al 2012 France	Hospital	8 acupuncture sessions	60 patients with muscular skeletal pain for more than 3 months	Study based on pre and post treatment.	Acceptability of an acupuncture intervention for geriatric chronic pain.	After 5 weeks patients reported improved sleep quality and a reduction in anxiety. Caregivers noticed a decrease in patient aggressiveness. It was therefore concluded that acupuncture could be very beneficial for treating older patients.
Ferrell et al 1994 USA	Care in the home	Survey and self-care logs	66	Quality of Life tool containing items measuring pain distress and pain intensity.	Education improves knowledge and attitudes about pain as well as the use of drug and non-drug interventions.	Pain affects all aspects of quality of life. Structured pain education should be a standard intervention as it improves quality of life for older patients with cancer as well as their family care givers.
Fuchs-Lacelle & Hadjistavropoulos 2004 USA	Nursing home	Interviews (in line with Pain Assessment Checklist for Seniors with Limited Ability to Communicate) (PACSLAC)	28 primary caregivers, 40 registered nurses (phase 2) and 34 registered nurses and 6 psychiatric nurses (phase 3).	PACSLAC rating was conducted.	Development and preliminary validation of the PACSLAC.	Findings showed the reliability and validity of the PACSLAC as a pain assessment tool for seniors with dementia. However, a limitation of the tool is that many care-givers were reporting on recent events that they had experienced with patients.
Ghafoor 2003 USA		Guidelines on assessment and quality indicators for persistent pain management and coping strategies		Considers the treatments available for bone and joint, neuropathy, vascular, pharmacological treatments and opioids and advantages and disadvantages of the various treatments.	Management of painful conditions in the elderly.	Pain management in the elderly should be recognised and treated otherwise it leads to a decrease in quality of life. Pharmacology is the most common approach and pharmacists are key professionals for this population.

Author(s), date, country	Setting	Method	n	Assessment tool used	Overview	Recommendations
Hall-Lord et al 2002 Sweden	Nursing home	Questionnaire and QPP (Quality Patients Perspective) questionnaire	232 family members of elderly people in 10 nursing homes	Prescribed drug data obtained from medical records	To explore family members' perceptions of pain and distress relating to analgesics.	Higher levels of psychological distress reports higher pain intensity. Family members felt help and support received for pain and distress insufficient. In residents who reported moderate to severe pain, none at the time were prescribed with pain medication or the appropriate pain treatment. Pain is often not detected in non-communicative or communicative nursing home residents and there is a failure of nurses to make adequate assessment. Family members could also have insufficient knowledge about residents' pain. Overall, there is a need for better assessment and less task-orientated care.
van Herk et al 2009 Netherlands	Nursing home	A multicentre cross-sectional study	174	Numeric rating scale to measure pain intensity.	Study aims to evaluate the utility of proxies (caregivers and relatives) for the assessment of pain in nursing home residents and to consider different aspects influencing reports. Proxy reports of relatives and caregivers on presence and intensity of pain is unreliable, especially for impaired persons. The use of standardised pain observation scale could be helpful.	Pain management for nursing home residents could be improved by educating caregivers about assessment and treatment of chronic pain. Relatives should be informed about chronic pain and learn how to alleviate pain through non-pharmacological interventions. Proxy reporting on a one dimensional pain intensity scale is of limited value, notably regarding cognitively impaired residents. Suggests using multidimensional pain observation scales for reliability and validity, with carers and relatives being trained to use these measures.

Author(s), date, country	Setting	Method	n	Assessment tool used	Overview	Recommendations
Horgas & Dunn 2001 USA	Nursing home residents	Survey on pain ratings	45 nursing home residents		No significant association between carers and patients reporting of pain. Incongruent ratings included both under detection and over reporting by the nursing assistants. Only residents' self-rated affect (e.g. depression, well-being) was significantly associated with whether their pain was congruently assessed, under detected, or over reported. Most depressed were those thought not to be in pain and well-being was highest for those thought to be in pain but were not.	No link between demographic of caregiver and pain congruence outcomes. Findings illustrate the complexities of assessing pain in older adults, and the need to include nursing assistants in educational programs on managing pain in elderly nursing home residents.
Johnson et al 2011 Australia	Residents of an old peoples' home	Questionnaires completed by older person or informant to compare pain behaviour assessment tools. Interviews with caregivers.	186		Examines the validity and reliability of three pain assessment tools. The validity and reliability of tools improved when pain assessment was made during movement-based assessment of the resident. The progression of cognitive impairment in older people creates difficulty in recognising and assessing pain.	Improvement of current pain assessment tools to reflect the range of education levels of caregivers employed in aged care facilities who provide care for older people with cognitive impairment. Progressive changes occurring in an older person due to continual cognitive impairment may impact on caregiver recognition of pain.
Martin et al 2005 Canada	Nursing home and community	Focus groups	12 older people, 8 caregivers and 25 professionals	Self-report (verbal) and behaviour observation.	Study from a range of stakeholders in receipt of or providing pain assessment and treatment to seniors. Focus groups explored the assessment and treatment of pain from each of the different stakeholder groups (older people , care givers and professionals).	Self-report of pain should only be attempted with seniors with mild to moderate dementia supplemented with observations and care giver reports. Lack of assessment procedures for seniors with limited ability to communicate compounded by a lack of knowledge of up to date procedures. Older people in pain are under-medicated and there is greater attention on alternative methods of pain relief. More training for health care providers and more systematic records of patient experiences of pain required.

Author(s), date, country	Setting	Method	n	Assessment tool used	Overview	Recommendations
Mentes et al 2004 USA	Nursing home	Semi-structured interview format	16 family members/ friends and 11 nursing assistants of 20 cognitively impaired nursing home residents	Interviews	To understand the perceptions and care practices of family members, significant others and formal caregivers concerning pain detection in cognitively impaired nursing home residents.	Nursing staff acknowledged that pain assessments are more difficult in residents with dementia. Understanding the background history from the resident's family highlighted the importance of knowing the patient. Concluded that staff need to be taught about the non-verbal expressions of pain, eg the use of facial expressions to determine pain.
Papadopoulos et al 1999 UK	Aromatherapy service based in a hospital carer support service	Interviews and written descriptions	6 clients and 4 care-givers	Interviews and written descriptions by aromatherapist were compared to explore benefits of aromatherapy	To evaluate an aromatherapy service for older adults with physical health problems and their carers.	All sampled population benefited from aromatherapy and felt more relaxed after session. Study was limited as only based on experiences of one aromatherapist.
Shega et al 2006 USA	Academic outpatient geriatric clinic	Cross-sectional analysis of an observational cohort study	115 African-American based in community and their caregivers	Case study interviews for 2 years	To explore pharmacological treatment of non-cancer pain in persons with dementia and to identify predictors associated with insufficient analgesia.	Persons with dementia suffering non-cancer pain are at greater risk of being untreated with pharmacological treatments than those persons without dementia. Physicians often concerned about prescribing analgesia which could worsen a person's condition and about potential addiction.

17.4. Self-report measures of pain assessment

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
de Andrade et al 2010 Brazil		Literature review		VAS, Functional Pain Scale (FPS), VDS, Present Pain Intensity (PPI), Global Pain Assessment (GPA) PAINAD, CNPI, OPBAI, DOLOPLUS2, PADE, PAINE, McGill. DN4		Summary of physiology, pain scales, questionnaires and pharmacological treatment. Concludes that the presence of pain should be assessed by direct questioning of the patient and if self report not possible then interviews with caregivers or direct observation should be undertaken.	Excellent summary table with recommendations based on Galgiese & Melzack 2000. Highlights that pain is not a normal part of ageing.
Caraceni et al 2002 Europe	Palliative care	Literature search				Recommendations of expert working group looking at literature and expert opinion. This article is dated before DOLOPLUS was validated; they conclude no instrument is available for assessment of pain in cognitively impaired. For prevalence studies/severity studies for adult patients with no cognitive impairment, BPI short form is recommended. For adults with cognitive impairment, standard 4 point VDS is recommended. For those with cognitive impairment who are unable to communicate, observer rating using 4 point VDS is recommended.	More recent articles are now available for reference .
Chatelle & Vanhaudenhuyse 2008 France	End-stage dementia, newborn 7 preverbal children, severely brain damaged patients with disordered	Discussion of validated pain scales				For evaluating intensity of pain: DOLORPLUS was limited in patients unaware of passage of time. ECPA was slightly better than DOLORPLUS in patients with dementia. PAINAD was easiest to use and easiest to understand for patients. To detect quality of pain via pain	In French Language only

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
	level of consciousness					behaviours: PACSLAC was useful but it does not provide guidance on how to interpret scores obtained. CNPI looked at non-verbal pain indicators to arrive at a score indicative of pain intensity. Paper hopes that neuroimaging may help us find a way forward in assessing pain in these hard to assess groups.	
Chibnall & Tait 2001 USA	Hospitalised older adults, mean age 76, with cognitive impairment	Pain measured with 4 scales. Data collected over 21 weeks then analysed having been aggregated	90	VRS, FPS, 21 Point Box Scale, GBS		21 Point Box Scale emerged as the best all round measure. It was superior in reliability, construct validity, post-dictive validity, and memory bias to any of those tested.	Findings consistent with Jensen et al 1986, 1992, 1993.
Closs et al 2004 UK	Nursing home residents	Cognitive status assessed then residents asked if they were in pain. If yes, they were they were asked to complete 5 pain assessment scales. Scales presented in random order. Record made for number of explanations required for each scale. Residents asked which score they preferred.	113	VRS, NRS, Face Pain Scale, Colour Pain Analogue Scale, Mechanical VAS		There is a need for individualised attention to pain in nursing home residents. Carers may need to provide several and varied opportunities for pain to be expressed. Simple VDS seemed most successful. Study showed no difference in pain scores according to cognitive status but those with cognitive impairment had greater difficulty in completing pain scales.	Useful and readily understandable paper with robust methodology.

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
Davies et al 2004 Australia	Extended care units in large metropolitan hospital	Administration of multidimensional pain tool to patients. Staff survey.	27			Pain assessment for cognitively impaired adults needs to be based on a combination of physical and behavioural indicators.	Tool used in study was often not completed with staff citing that it was complicated and time consuming. Small study which comments that further work would be required but confirms need for pain assessment in this group to be multi-factorial.
Fisher et al 2002 USA	3 nursing homes in Alabama, cognitively impaired residents	Correlational study	57	PPQ MDS (Minimum Data Set pain items)	Pain not well correlated between PPQ and MDS.	Preliminary study. PPQ elicited substantially higher estimates of pain prevalence than MDS and is therefore described as a more sensitive measure of pain for this sample.	Small study. PPQ was a 3 item proxy pain questionnaire developed by the researchers. There was an absence of self report data and direct observational data in the study.
Fisher et al 2006 USA	2 nursing homes	Interview, observation, retrospective chart review. Descriptive and correlational analysis	61	Modification of Geriatric Pain Measure (GPM_M2)	Scores significantly correlated with number of chronic pain associated diagnoses.	Results suggest that many nursing home residents can provide consistent and reliable self-report pain data given the appropriate time and assistance. Average time of administration of GPM was 13 minutes.	Extends research into self-report measurement by cognitively impaired older adults. Implications for practice are that self-report can be facilitated by giving staff the skills to interview patients about their pain in an objective way in a reasonable time frame.
Gregory 2011 UK	Acute hospital	Participatory action research	54	Abbey, CNPI, PADE, PACSLAC, PAINAD, PATCOA, MOBID		None of the established tools were ideal and at times failed to identify pain.	Behavioural pain assessment should always be used with other information and ideally with someone who knows the individual well.
van Herk et al 2009 Holland	Nursing home residents (n=6) (median age circa 80) with/without cognitive impairment	Prospective study investigating the relationship between observer (categorised as either carer and family) versus self report of pain in adults with no or mild/moderate	127	NRS	Data were consistent with low-to-moderate correlation coefficients between residents and caregivers (ICC = -0.12 to 0.25); residents and relatives (ICC = -0.51 to 0.48); caregivers	Observer (categorised as either carer and family) versus self report of pain in adults with no or mild/moderate cognitive impairment. Proxies were also asked how certain they were about their observations.	All three parties reported median pain intensity during the preceding week as 6.0. 70-100% of patients with mild to moderate cognitive impairment were able to complete the scale. Proxy report of relatives and caregivers on presence and intensity of pain is unreliable, especially for cognitively impaired persons.

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
		cognitive impairment			and relatives (ICC = 0.03 to 0.31). Residents themselves judged pain intensity at rest significantly higher than did proxies (p = 0.05). Caregivers scored significantly higher ratings for residents on analgesics (p = 0.001) and significantly lower pain ratings if they were more satisfied with the prescribed analgesics (p = 0.01).		
Herr 2010 USA		Evidence based review		NRS, FPS-R, Iowa Pain Thermometer (IPT), VDS and VAS.		Summary of various strategies/tools for pain assessment. Recommends IPT as having a low failure rate and a scale preferred by older adults. Discusses behavioural pain tools including PAINAD, CNPI, NOPAIN and PACSLAC which is described as most useful.	Highlights gaps between best practice recommendations and current clinical practice. Good advice on questions to consider when selecting an appropriate pain tool. Cross references American Society for Pain Management 2006 task force statement.
Herr 2011 USA		Literature review				Summary of the prevalence and under-treatment of pain in the older person. What constitutes appropriate assessment? Strategies for measuring using self report. Assessing the impact of pain on function and quality of life. Assessment techniques for non-verbal adults. Pain behaviour tools.	Tables on common pain behaviours in cognitively impaired older adults and tools for assessing pain in non-verbal adults. Very useful.
Herr et al 2011 USA		Literature review				Position statement with clinical practice recommendations. Discusses 'attempt a trial of analgesia as a pain assessment technique'. Examines proxy reporting of pain. Highlights how	Addresses 5 populations which may be unable to self-report. Examines hierarchy of pain assessment techniques described by Coyn & McCaffery et al 2011.

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
						individuals who are unable to communicate their pain are at greater risk for under recognition and under treatment of pain.	
Horgas & Millar 2008 USA	Nursing home	Scenario description		PAINAD		Scenario follows through what happens to the patient. There are also online video clips to watch and a CE credit test to do.	Excellent practical article on how to use PAINAD in practice.
Horgas et al 2007 USA	Older persons care	Patient study using data collected from a larger study	40	NOPAIN	Significant correlation between NOPAIN and self-report.	NOPAIN was concise, easy to use with minimal training and could evaluate pain in older adults including those with mild to moderate dementia.	Supports NOPAIN as a clinically relevant tool for evaluating pain. Highlights that further research is required to determine if NOPAIN meets needs of different genders and races.
Horgas et al 2009 USA	Nursing homes and retirement apartments in Florida	Quasi-experimental, correlational study	126	Items from SPI, NRS and McGill and Pain Behaviour Measure used. Cognitive function assessed using MMSE.	Total number of pain behaviours significantly correlated to self-reported pain intensity.	Behavioural pain indicators did not differ between the 2 groups of cognitively impaired and intact older adults. Cognitively impaired elderly people self-report less pain than cognitively intact elderly people but only when assessed after movement.	Supports the use of multidimensional pain assessment in persons with dementia.
Hutchison et al 2006 USA	Palliative care	Controlled study using 2 case matched groups with impaired cognition.	53 control 27 experimental	PAINAD		Evaluated tool in patients with cognitive impairment and found significantly higher opioid use and lower rates of reported unknown pain in group using the PAINAD. Control group used self-report intensity tool.	Comments on ease of use of PAINAD.
Jensen Dham et al 2012 Denmark	Community patients with Alzheimer's disease	Data collected at baseline visit of Danish Alzheimer Intervention Study. 3 year multicentre single blind RCT	321	EuroQol EQ-5D	Fair agreement between self and proxy ratings of pain.	The study showed that individuals reporting pain had more neuropsychiatric symptoms. In cognitively intact patients there was a consistent association between pain and depression. Pain was associated with poor quality of life. Study concluded that self report may not be the best means of	Strength of study is the large number of individuals with early Alzheimer's but it was not designed as a pain observation study so a crude measure of pain was used and information is not available about durations or cause of pain. Only patients with mild dementia were studied, so no information is

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
						assessing pain in the cognitively impaired and may lead to suboptimal treatment of pain.	provided about individuals with moderate to severe dementia.
Jowers Taylor & Herr 2003 USA - Southern	Volunteer elderly African Americans in own home setting	Comparative descriptive Test, re-test	57	FPS, PINS, VAS, VDS		Completion of four pain assessment tools with a 'remembered pain intensity' and then repeated at a two week interval with the same remembered pain. As cognitive impairment increased (MMSE) reports of pain intensity decreased.	Patients with and without cognitive impairment were able to use all four pain scales. Study concludes the concurrent validity of these four pain scales.
Kaasalainen & Crook 2003 Canada	Elderly residents in long term care	Comparative descriptive	130	FPS, PPI, NRS, behavioural tool		Completion rates of 3 pain assessment tools and the self-report skills of residents with varying degrees of cognitive impairment were evaluated. PPI and NRS were preferred. Faces proved challenging. NRS not achieved by those with cognitive impairment. None with extreme cognitive impairment were able to complete verbal report scales. A large proportion of those with moderate impairment could complete verbal report.	Provides evidence for further research required into suitability of Faces scales for older adults. Also suggests that ability to conceptualise numbers diminishes with the onset of dementia, explaining why NRS is not useful.
Kamel et al 2001 USA	Elder care	Cross-sectional , chart review and interviews	305	VAS, Faces, pain descriptive scales		In half the group pain was assessed by asking 'do you have pain'. In the other group 3 pain scales were administered. The overall frequency of diagnosing pain was greater in group 2 in both cognitively impaired and non-impaired patients.	This paper supports the use of pain assessment tools to diagnose pain in nursing home residents.
Keane et al 2010 Ireland	Consultant geriatricians	Survey	58		66% response rate	58% used no pain assessment tool routinely. NRS was used most frequently by 24%, VAS by 18%, VRS by 18%, Faces by 10.5%.	Suggests significant scope for agreement on and adoption of pain scales for older people.
Leong et al 2006 Australia	Nursing home	Validation study	88	SRPS, NRPS, PAINAD	PAINAD correlates with NRPS but both scales poor	Compares self report, nurse report and PAINAD across nursing home residents with dementia.	Concludes NRPS and PAINAD differ from SRPS especially in the presence of depression. Supports

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
					correlation with SRPS.		view that nurse assessment of pain correlates with PAINAD.
Manfredi et al 2003 USA	Nursing home	Interview, video	18 staff	Faces	The intraclass correlation coefficient for the answers of the 18 viewers evaluating each videotape segment for the presence of pain was 0.64.	Study asked cognitively competent patients with leg ulcers being dressed if they had pain, then videotaped a group of patients with dementia having dressings changed on their ulcers and showed these videos to healthcare professionals to rate pain.	Concludes that clinician observation of facial expressions and vocalisations are accurate means for assessing the presence but not the intensity of pain in patients unable to communicate verbally because of advanced dementia.
Manz et al 2000 USA	Extended care facility	Cross-sectional	100	Memorial Pain Assessment Card verbal subscale, Faces, COOP subscale, NRS, PPI	High amongst all pairs of tools	Only 45% of residents communicated a preference for a tool, with the Faces proving the most popular.	Concludes that most elderly patients with normal to moderately impaired cognitive function and some with severe impairment are capable of using self report tools.
McAuliffe et al 2008 Australia	Older people with dementia	Literature review		BS-21, CDR, CNPI, Doloplus-2, DS-DAT		Literature reviewed 1993-2007. Barriers to pain assessment included lack of recognition of pain, lack of education/training, mis- or late- diagnosis, non-use of assessment tools.	Adds weight to argument that training and education along with appropriate use of tools is essential to assess and treat pain in the older adult with dementia.
Ni Thuatail & Welford 2011 UK		Critique and summary paper		BS-21, CDR, CNPI, Doloplus-2, DS-DAT, DSM-IV, FPS, GDS, McGill PPI, MMSE, NOPAIN, PACSLAC, PAINAD, PAS, VAS, VDS, VRS		Thorough assessment of the pros and cons of each tool.	Article concludes that there is no gold standard. Does not discuss NRS.
Pautex et al 2005 Switzerland	Acute care and intermediate care in geriatric hospital	Prospective clinical study of consecutive patients	160		Moderate correlation between observational and self-assessment.	The proportion of patients reporting pain did not change with dementia severity. Notes 25% of patients reporting pain were not receiving analgesia.	Confirms self-assessment as most effective pain assessment for most patients. And observational scales should be reserved for the few patients who cannot self report.
Pautex et al 2006 Switzerland	Geriatrics, hospital and	Prospective clinical study	129	VDS, VAS, FACES	Moderate to strong correlation between	44% of patients reported pain, 40% of those were receiving no	Supports positions that clinicians should not apply observational

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
	geriatric psychiatry service, patients with severe dementia				the three self-assessment scales (Spearman correlation coefficient (r)50.45–0.94; Po.001)	analgesia. Pain was mostly musculoskeletal in origin. There was no difference in the type of pain and use of analgesics by degree of cognitive impairment. Observational scales underestimated intensity of pain compared with self-assessment.	scales routinely in severely demented patients because many are capable of reporting their own pain.
Pautex et al 2007 Switzerland	Hospitalised older care	Prospective clinical study	180	VAS Dolorplus-2	Dolorplus-2 correlated moderately with self-assessment (Spearman coefficient: 0.46)	All participants assessed their chronic pain using the VAS. Dolorplus-2 was independently completed by the nursing team.	These data suggest that Dolorplus-2 could be substantially shortened as the brief version used performed similarly to the complete version.
Phillips 2007 USA		Literature summary in pharmaceutical journal		VDS, MPQ, VAS, FACES, DS-DAT, FLACC, PAINAD, ADD, CNPI		Examines barriers to pain assessment. Looks at pain assessment interview modelled on ABCDE and PQRST mnemonics. Describes assessment scales.	Highlights self report as single most reliable fact in pain assessment and the need to ensure health care professionals are educated and skilled in assessment.
Rodriguez 2001 USA	Older people with pain	Review in nursing journal		VAS, NRS, Distress checklist, MPQ, SF-MPQ, Pain thermometer, Pain Intensity Numbers Scale (PINS), HVAS, PRIS, PRIA, POM-VAS, FPS, BS-11, BRS-6, WAS, PRIM		Overview of evidence for each tool with tabulated study design and instruments and the sample characteristics.	Positive correlation among the FPS, the VAS, the VDS and the NRS for current level of pain in the older person.
Scherder & Bouma 2000 Netherlands	Older people with Alzheimer's disease (AD)	Prospective study comparing non-demented vs older people with AD (matched painful conditions).	60	Coloured Analogue Scale for pain intensity, Coloured Analogue Scale for pain affect, Faces Pain Scale.		Prospective study comparing non-demented vs demented older people (a) the comprehension of the purpose of the scale and (b) whether demented patients reported less pain intensity and impact.	The CAS was correctly interpreted by all older people without dementia, by early AD patients, and by more than 80% mid stage patients with AD. The second best interpreted scale was the Faces PS whilst the FAS was the least well interpreted.
Scherder et al 1999	Older people with	Prospective study comparing non-	35	MPQ-DLV MPI-DLV, NHP		Overview of analgesia use in AD and advanced AD. Discussion of the	AD patients report less severe pain and affect. No difference in

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
Netherlands	Alzheimer's disease (AD) in a residential home	demented vs demented older people (matched painful conditions) for pain affect loss (in AD) and analgesia consumption.				affective components of pain in healthy and AD patients.	analgesia consumption between patients with AD and those without.
Scherder et al 2003 Netherlands	Older people with possible vascular dementia (VaD) in a nursing home	Prospective study comparing in order three VAS scales.	40	Three VA Scales: 1. Coloured Analogue Scale for pain intensity 2. Coloured Analogue Scale for pain affect 3. Faces Pain Scale MPQ (NWC), CNPI		Prospective study comparing non-demented vs patients with possible vascular dementia (a) comprehension of the purpose of the scale and (b) degree of pain reported.	A significant increase in scores on the CNPI in the VaD group. Suggests that patients with possible VaD may experience more pain than healthy older people.
Soscia 2003 USA	Older people with cancer	Discussion of behavioural indicators and review of pain assessment tools		VAS, VDS, Faces, MPQ		Discussion of implications for practice	Most appropriate tools deemed to be the vertical VAS, the VDS, the Faces Pain Scale and the SF-MPQ. Recommends using a combination of tool + observation in this population.
Stolee et al 2005 Canada	Older people with cognitive impairment	Systematic review in US geriatric journal		21 box scale, BPI (German) CAS and FAS, Faces pain scale, Gracely box scale, MPQ, McGill PPI, Memorial pain a card, Pain behaviour interview, Pain thermometer, Philadelphia PIS, Rand COOP card, Verbal descriptor		SR of self-report pain instruments in older persons with cognitive impairment. Adequate reliability for pain behaviour interview only. Adequate validity with thoroughness and results for 21 box scale, CAS, Faces (++) , Gracely box scale (++) , McGill PPI (++) , Memorial (++) , Philadelphia, Rand COOP (++) , verbal descriptor, VAS and NRS.	Cognitively impaired older people may provide information about the presence or absence of pain. Use a multifaceted approach with self report methods, observations of carer and family together with measures of functional impairment.

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
				scale, VAS, NRS and VRS			
Streffer et al 2009 Switzerland	Orofacial pain	Prospective study to screen for severely suffering patients	102	Pictorial representation of illness and self-measure (PRISM) + VAS, GCPS, HADS, Insomnia Severity Index (ISI)		N/A Prospective study to screen for severely suffering patients	N/A Does not meet inclusion criteria as mean age 44.3 years (female) and 43.6 years (male). Range 17 – 76 years.
Tsai & Richards 2006 USA	Elders with cognitive impairment in nursing homes with knee or hip OA related pain	Pilot study to investigate usefulness of WOMAC pain scale	14	Western Ontario and McMaster OA Index pain scale, VDS and PPI		Repeated after 5 minute interval. Researcher read the pain scales out to subjects with concurrent questioning of carers using all three instruments for last 48 hours.	Patients with severe impairment were unable to complete any scale. Those with mild to moderate impairment had good test/re-test validity. Strong correlation between all three instruments. Strongest association between VDS and PPI.
de Waters et al 2008 USA	Cognitively impaired and intact older adults after hip surgery in orthopaedic unit of Midwestern metropolitan hospital.	Comparison of self reported pain and PAINAD scale in convenience sample. Data analysed using SPSS 11.0.	25	NRS PAINAD	Significant correlation between PAINAD and NRS pain scores.	Recommends use of PAINAD as a standardised pain assessment tool to orthopaedic nurses.	Small study with recommendations for wider research but useful in its support of PAINAD as a valid and reliable tool in post operative older adults.
Weiner et al 1996 USA	Elders with no cognitive impairment and CBP community dwelling	Concurrent validity of observer rated pain behaviour with pain self report	39	Self rated disability, NRS, PRS, NRS, McGill PRI	Strong correlation with traditional pain protocol behaviours, with historical and current ADL, current and post-protocol baseline pain.	Evaluation of community based elders with LMP and lumbosacral osteoarthritis, the concurrent validity of observed pain behaviours with self-report measures and the degree to which pain related behaviours impacted upon disability.	Demonstrated concurrent validity of observer related pain behaviour with self-reported pain.
Wheeler 2006 USA	Pain assessment in patients with	Review in nursing journal		Abbey pain scale, ADD, CNPI, DS-DAT,		An overview of pain assessment tools and management strategies in patients with mild to moderate	Nil of note

Author	Setting	Method	n	Assessment tool	Correlation reported	Overview	Recommendations
	mild to moderate cognitive impairment			DOLOPLUS-2, FLACC, NOPPAIN, PACSLAC, PADE, PAINAD		cognitive impairment secondary to delirium or dementia	
While & Jocelyn 2009 Australia	An overview of observational pain assessment scales for people with dementia	Review in nursing journal (clear search strategy)		Abbey pain scale, ADD, DS-DAT, DOLOPLUS-2, ECPA (French), NOPPAIN, PACSLAC, PAINAD, Proxy Pain Questionnaire (PPQ)		A review of observational pain assessment tools with clinical utility in community based patients with dementia, for use by community nurses and carers.	Suggests that the Non-communicative Patients Pain Assessment Instrument (NOPPAIN) is feasible for use by nurses and carers.
Wynne et al 2000 USA	Pain assessment in cognitively intact and impaired nursing home residents	Study of four pain assessment tools and three pain location instruments among nursing home residents	46 pain instrument study (of which 37 completed year long study)	Pain severity: McGill Pain Scale, Wong-Baker Pain Scale, VAS, VRS Location: Doll, picture and self		A comparison study of standard pain instruments administered on a monthly basis for one year in a nursing home with cognitively intact and impaired patients	Use McGill Words Scale for pain severity and getting patients to indicate pain location on their own bodies.
Zwakhale et al 2006 Netherlands	Older people with dementia in a nursing home	Prospective observational study of procedural pain	128	Translated PAINAD, PACSLAC, DOLOPLUS-2		Prospective observational study during procedural pain (flu injection) and nursing procedures. Compares two raters observations of pain.	Evidence for validity and reliability of all three tools in practice. PACSLAC viewed as the most useful scale by nurses. Dutch version of DOLOPLUS-2 considered to be difficult to use.
Zwakhale et al 2007 Netherlands	Older people with dementia in a nursing home	Descriptive study of increasing usefulness of a behavioural pain scale (PACSLAC)	128	PACSLAC		Prospective observational study during procedural pain (flu injection). What PACSLAC items represent the pain cues most frequently? What is the scale structure of the reduced PACSLAC-D tool? Are the PACSLAC-D and its subscales internally consistent?	Evidence for the internal validity of a Dutch language short PACSLAC-D tool. Social-emotional items played a significant role in detecting pain.

17.5. Clinical assessment

Author(s), Date, Country of Origin	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
Bloomqvist & Hallberg 1999 Sweden	Investigate presence of pain, localisation, intensity, type and pharmacological treatment among older adults living in sheltered accommodation or receiving rehabilitation. Investigate agreement between pain assessment performed by staff and the older adults.	Random sample 29 participants. Structured interviews DIBS, GBS and VDS scale	High level of undetected pain. No pain medication prescribed n=9 who stated they frequently suffered from pain. Agreement of pain assessment between older people and staff deemed 'fair'. Insufficient basic knowledge of pain and pain assessment among staff, as well as lack of routines and methods for repeated pain assessment, increasing the risk of undetected pain. Older adults with speech and language difficulties had their pain intensity underestimated. Basic education in pain and pain assessment needed.	Structured interviews provides reliability, consistency, and validity.	Interviews were 1-1½ hours long. The length may have led to incorrect findings as older participants may have tired. Structured interviews constricting. Number of non-respondents n=14 (retrospective questioning).	Basic education in pain and pain assessment needed. Older adults at risk of undetected pain especially if they had speech difficulties.
Brown 2004 UK – Northern Ireland	Identify how health care professionals contribute to the assessment of pain and control of postoperative pain in older people and highlight potential barriers to achieving enhanced pain management in this group.	Systematic literature review. Literature search CINAHL MEDLINE RCN online 1970-2003 116 papers, 66 selected.	Pain and its management are a common. Practitioners do not translate the information and knowledge into their clinical practice. No rationale is given for this problem in older people. Need for individualised pain assessment. Use action research to change practice. Clearly define role of MDT – collaborative approach is essential.	Systematic	Cochrane not used	Practitioners do not translate information and knowledge into their clinical practice. Need for individualised pain assessment. Clearly define role of the MDT – a collaborative approach is essential.
Cadogan et al 2005 USA	Test a standardised resident interview and medical record review protocol to assess and score quality indicators relevant to pain.	794 eligible residents, 542 medical record reviews, 478 residents undertook seven-item pain interview, 30 nursing homes.	48% reported symptoms of chronic pain. Nearly half of these had no physician assessment of pain in the past year. More than 50% of these had nurse pain score of 0-4 in the 4 weeks prior to the interview. Physicians scored low on the assessment of pain, undertaking a targeted history and physical	Size of sample	No pain assessment protocol for those not able to undertake an interview.	Pain care based on medical evaluation alone is insufficient as it provides an incomplete picture. Suggests that 80% of nursing home residents can be interviewed about their pain; use modified pain rating scales for cognitively impaired residents.

Author(s), Date, Country of Origin	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
			examination; also lack of documentation of risk factors for using analgesia and documenting response to treatment.			
Clark 2006 USA	Develop and implement an intervention to improve quality of pain and assessment and management; improve nurses' knowledge and attitudes about pain management and assessment; improve pain assessment and management practices.	Semi-structured interviews. 12 nursing homes including 6 control, 103 transcribed interviews, 9 nursing home administrators (5/9 nurses), 38 registered nurses, 26 licensed practical nurses, 22 certified nursing assistants, 2 rehabilitation therapists, 3 social workers, 3 activities directors and assistants.	Pre-intervention: uncertainty in pain assessment, influence of residents' characteristics and attitudes in facilitating accurate measurement of pain, resident-centred cues to residents' pain and behavioural and visual cues. Lack of staff continuity impacted on pain assessment. Development in one nursing home of pain team. Pain-management training to be included in orientation and provision of CPD 'keeping the pain message alive'. Certified nursing assistants to be included in education. Physician involvement and prescription practices barriers to improving pain care.	Two co-investigators undertook all interviews	Participants were paid for their participation.	Need for initial training in pain management and CPD to include assistant practitioners. Need for continuity in assessment. Cognitive impairment and physician involvement and prescription practices barrier to improving pain care.
Cohen-Mansfield 2005 USA	Assess the reliability and validity of nursing staff members' assessment of pain in cognitively impaired nursing home residents.	57 cognitively impaired nursing home residents, 52 nursing staff structured interviews with research assistants, 6 nursing units. Pain data obtained from the MDS, the resident by asking and an examination by a physician recruited outside of the nursing home.	Higher cognitive functioning and a higher intake of medication for pain were associated with increased perception of pain. Pain medication would seemingly not alleviate pain. Staff discount complaints of pain from people with dementia as are seen not to have the capacity to express 'anything meaningful'. Staff rate behavioural symptoms rather than relying on a global impression. Difficult to assess pain in people with severe cognitive impairment.	Inter-research reliability; Inter-nursing staff reliability; Test-retest reliability.	No differentiation in n=52 between registered practitioners and assistants when discussing the results.	Difficult to assess pain in people with severe cognitive impairment.

Author(s), Date, Country of Origin	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
Gregory & Haigh 2007 UK	Assess knowledge, skills and attitudes of the MDT caring for older people on acute medical wards.	407 questionnaires, 42 registered nurses, 10 non-registered nurses, 6 doctors, 8 pharmacists, 23 physiotherapists	Highest level of attendance at in-house pain management training was physiotherapists. Assessing pain seen as important. 80% of non-registered nurses relied on vital signs and behaviour as indicators of a pain. Variety of knowledge concerning analgesia between professionals. Perception that analgesia is more effective in younger people.		Questionnaire - possibility that those with an interest may be the more likely respondents. Small sample size so not generalisable.	A range of knowledge and attitudes to pain management within the MDT. Need to improve these and develop training/education.
Jones et al 2005 USA	Part of a multi-faceted intervention study to improve pain practices in nursing homes. Aims to ascertain appropriate tools for measuring pain by residents. Required to choose an assessment tool which represented their pain.	12 nursing homes, 1182 residents required to choose an assessment tool which represented their pain out of three provided. Staff knowledge and attitude surveys. Resident interviews and chart reviews.	Men seemed to prefer numbers/ numeric scales. Over 85% Caucasian –verbal Level of pain identified may be altered by type of tool used. 50% of residents stated they had pain but displayed no pain behaviours so nurses then downgraded the residents' pain intensity.	Sample size	Staff knowledge and attitude surveys – no indication of sample size.	Older people and cognitively impaired older people can report their pain and its intensity. Nursing home staff should use self-report as an initial assessment tool. Increased pain behaviour in those unable to use a pain measurement tool suggests a high pain intensity level.
Kaasalainen 2007 Canada	Explore attitudes and beliefs that affect decisions about prescribing and administering pain medication in older adults living in 4 long-term care establishments. Emphasis on older people with cognitive impairment.	Grounded theory. Theoretical sampling. 9 physicians, face-to-face interviews with semi-structured questionnaire. 24 registered nurses and 33 registered practical nurses, interviewed in 7 focus groups.	Pain management problematic and needs more attention. Residents' pain not recognised by health care providers unless resident expressed it verbally; those with dementia more at risk of pain needs not being assessed adequately and addressed. Uncertainty about how to manage pain diagnosis and treatment. Pain medication seen as pragmatic treatment if diagnosis not clear. Reluctance to use opioids unless for palliative care. Need to work to individualised approach to pain treatment. Reliance on nurses to assess pain as	Barriers and facilitators to optimal pain management presented. Both physicians and nurses included.	Limited number of physicians recruited 9/45 (20%)	Pain management should be a 'must do' obligation for nurses and physicians in long term care resident.

Author(s), Date, Country of Origin	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
			physicians had limited patient contact. Needed to 'trust' the nurses' judgement.			
Kaasalainene 2007 Canada	Examination of the nurse practitioner within an interdisciplinary model of pain management in long term care.	Cross-sectional survey. 16 participants, questionnaire. Qualitative and quantitative using content analysis.	Barriers to assessing pain: lack of tools, lack of time/heavy workload; limited scope for prescribing opiates; lack of staff education; reservations about using opiates. Effective collaboration between nurse practitioner and Interdisciplinary team facilitates pain management, in particular with the physician.	Questions based on previous survey so tools seen as reliable and valid.	Limited number of respondents.	Barriers need to be addressed. Emphasis on interdisciplinary team collaboration increasing; nurse practitioners role in long term care could be better utilised.
Layman Young et al 2006 USA	Explore nurses' attitudes towards pain assessment tools and the relationship of these attitudes to education and experience.	Convenience sampling. 52 nurses, acute care unit. Open-ended questionnaire based on Fishbein and Ajzen's expectancy-value model.	Negative attitudes were demonstrated in 9.5% of the sample. 29 commented that the tools approved by the hospital were 'subjective and inaccurate'. Increase in years of experience did not necessarily mean a positive view of the pain assessment tools and outcomes. Rather than ongoing education, it is suggested that clinical mentors could influence and change caregiver behaviour.	Replicable. Reliable and valid tool.		Altering preconceived ideas and beliefs may lead to improved outcomes. Use of clinical mentors may facilitate this as opposed to only education and training. Patients' pain management satisfaction is influenced by nurses and other professionals involved in their care. Caregivers' ability to facilitate managing pain appropriately needs to be based on accurate knowledge as a more positive attitude towards pain assessment is linked to more education but not necessarily to more experience.
Liu et al 2012 Hong Kong, China	To report on the development and implementation of an observational pain assessment protocol (C-PAINAD) in a nursing home and its impact on pain management for cognitively impaired residents.	Exploratory study of pain management protocol. 11 nursing assistants used the protocol. 30 residents. 2 focus groups: 2 registered nurses, 8	Implementation of the protocol improved communication between the MDT. Regular recording as part of daily care improved comparison of pain and pain management. Did not significantly reduce pain score. Systematic pain management process implemented.		Lack of clarity on numbers of participants. Seemingly small sample.	Nursing assistants stated that pain protocol/training made them more sensitive and responsive to pain assessment. Protocol meant they were more systematic in their assessment of pain.

Author(s), Date, Country of Origin	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
		nursing assistants, 1 physiotherapist				
Mrozek et al 2001 USA	To explore nurses' attitudes towards pain, pain assessment and pain management practices in long term care facilities.	Postal questionnaire to 27 nurses in 10 long term care facilities. Focus on attitudes, pain assessment behaviours and pain management practices.	Agreement that chronic pain needs to be managed but identified that pain assessment and practice are influenced by own experiences of pain.	All nurses had extensive clinical experience. Most common assessment of pain is observation, but did not always report contortions and moaning all the time.	34% response rate, therefore not representative of all. Wide range of educational level so comparison limited on this basis.	Nurses' pain assessment skills are problematic. Need for ongoing education to ensure that health care professionals understand the factors that affect 'optimal' pain management.
Weiner & Rudy 2002 USA	Explore nursing home residents' and staff attitudes that may act as a barrier to the detection and management of persistent pain.	Survey involving 7 long term care facilities. 75 nursing home nurses, 75 nursing assistants, 75 nursing home residents. 3 structured pain attitude surveys and 3 separate questionnaires.	Differences in attitudes between the three groups. Residents believed that chronic pain does not change, demonstrated a fear of addiction and of dependence. Residents who were more dependent believed that staff saw them as less deserving than the more independent residents. Nursing assistants identified the need for more time and that complaints of pain were unheard. Identified that increasing their awareness of pain behaviour observation need not take any extra time and can be included within early morning care and a system for them to report their observations. Registered nurses did not fear addiction by residents. There is under-diagnosis and under-treatment of pain in residents in nursing homes. Physicians under-prescribe pain medication.	Sufficient range in numbers sampled.	Only nursing home residents who were able to respond verbally were included. Nurses' self-reported as questionnaires given out at a meeting.	If residents' attitudes and fears were addressed and if nursing assistants felt they had sufficient time for pain assessment, perhaps the result would be improved pain management.

Author(s), Date, Country of Origin	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
			All staff need knowledge, skills and attitudes to ensure effective pain management.			
Yi-Heng et al 2010 Taiwan	To evaluate the usefulness of registered nurses and nursing assistants pain reporting.	Prospective study in 6 dementia special care units in Taiwan (2 weeks in each). 304 older people, 15 registered nurses, 21 nursing assistants. Interview and observation.	Registered nurses can be used as proxy-pain informants for older people with dementia 'with caution'. Asking about pain levels and observing for pain should be daily routine assessment of pain. Feasible protocol needs to be developed to guide decision-making for treating pain in clinical practice.	Inclusion and exclusion criteria for participants explicit. Ethical consent obtained for all participants.	Observation may have led to observer effect/bias. Participating registered nurses or nursing assistants had a minimum of one month's experience in dementia care. Leads to the possibility of limited dementia specialist knowledge.	Registered nurses' assessment of pain maybe more reliable than that of nursing assistants.
Yun-Fang et al 2004 Taiwan	Explore pain prevalence, experiences and self care management strategies among older people in nursing homes in Taiwan.	Stratified random sampling n=150. 8 nursing homes. BPI-C and McGill pain questionnaire, self-report and semi-structured questionnaires.	Presence of pain in sample 65.3%. Limited use of self-care strategy. Nursing home staff need to be trained to perform regular pain assessments and provide current knowledge about pain assessment and management strategies.	Identified a range of terms describing pain and a variety of self-care management strategies. Strength in sample number. Triangulation evidenced.	Short form of McGill questionnaire used. Cultural differences in interpreting descriptors may impact on results.	Management of pain for older people in Taiwanese nursing homes is prevalent and is under explored. In house training on pain, assessment of pain (regular) and pain management recommended as there was limited use of pain management strategies.
Zwakhalen et al 2007 Netherlands	To develop a psychometrically sound questionnaire to gather information about the knowledge and beliefs of nursing staff regarding pain in older people with dementia.	Cross sectional design to develop questionnaire. n=125/167 in EMI wards in 2 nursing homes in the Netherlands. Comparison of results with 25 registered PhD student nurses and 20	Many nursing home staff show gaps in their knowledge and negative beliefs about pain in older people with dementia. This could lead to inadequate assessment and treatment. Where the majority of care is provided by nursing assistants, the level of education about pain is important.	Triangulation of results with the compassion groups.	New questionnaire. The results need to be replicated to provide supporting evidence that there was no bias within the questionnaire.	Staff had gaps in their knowledge about pain treatment and medication. They were satisfied with the way pain was treated and assessed. The level of education of staff seemed to influence their beliefs and knowledge about pain in this group and setting.

Author(s), Date, Country of Origin	Aims	Methodology	Main findings	Strengths	Limitations	Conclusions
		nursing students (convenience sampling).				

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17.6. Self-report and physical function

Author	Setting	Method	n	Results	Assessment tool	Overview	Recommendations
Hadjistavropoulos et al 2007 International	n/a	Consensus statement based on expert opinion and literature review	n/a	A set of recommendations for clinicians and researchers reporting measures agreed by the panel as having good utility and psychometric properties.	Self-report measures of function for older people with chronic pain.	A group of 24 leading experts in pain and older people produced a document of recommendations of assessment measures for a range of domains related to pain in older people. One section covered self-report measures for function.	The panel recommended measures for general function and anatomical site-specific function.
Menz et al 2006 Australia	Community	Cross-sectional survey	108	Reported a four factor structure explaining 62% variance. This added an extra construct, activity restriction, to the previously reported constructs of pain intensity, function and appearance. Activity restriction subscale correlated with SF36 general health subscale $r=0.21$ $p=0.029$. Functional limitation subscale correlated with SF36 mental health subscale $r=0.20$ $p=0.039$; and with Goldberg Anxiety and Depression Scale $r=0.23$ $p<0.015$. Internal consistency of total scale $\alpha=0.89$.	Manchester Foot Pain and Disability Index	Men and women >70 years mean age (1SD): 76.9 (4.9). MMSE ≥ 24 Participants were a subgroup self-reporting foot pain currently or in last month in a survey of adults over 70 years of age randomly selected from electoral roll.	The tool was recommended as a suitable tool for assessing foot pain in this population.
Roddy et al 2009 UK	GP clinics	Cross-sectional survey and a test-retest survey.	Cross-sectional survey $n=1342$ Test-retest survey $n=58$	Reported a three factor solution comprising the original constructs of pain intensity, function and appearance, in contrast to Menz et al 2006 above. Internal consistency of functional scale $\alpha=0.92$. Test-retest of functional scale kappa (95%CLs) 0.72 (0.54, 0.90).	Manchester Foot Pain and Disability Index	Cross sectional survey: Men and women >50 years mean age (1SD): 65.3 (9.4). Participants were a subgroup self-reporting foot pain in last 12 months in a survey of adults over 50 years of age registered with 3 GP practices. Test-retest survey: Men and women >50 years mean age (1SD): 65.3 (9.4). Participants were a subgroup self-reporting foot pain in last 12 months in a survey of adults over 50 years of age registered with 1	To avoid over-reporting, criterion for scoring items should be 'most/every day(s)' rather than 'some days or most/every day(s)' on which basis the function subscale provides a valid and reliable assessment of disabling foot pain in adults over 50 years.

						GP practice. Tests were separated by 4 weeks.	
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17.7. Pain assessment of older adults with mental health and psychological problems

* Indicates inclusion of paper with sample age <65years, which is below criteria age. However, sample extends into older ages and paper is of particular interest to overall review

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
Adams et al 2012 USA	Palliative care unit 92yr (F) with dementia	Association between distress and pain vocalisations in OA with dementia.	1	1) DSM to rule out PTSD diagnosis 2) vocalisations monitored 3) time line and chart notes on patient responses to personal care.	Association between patient centred care and vocalisations (versus task orientated care).	Patient centred care reduced vocalisations irrespective of fentanyl reduction.	Clinicians should assume distress present in OAs with dementia and use person centred approach alongside pain relief and monitor vocalisations as indicator of distress change.	Level IV
Agüera-Ortiz et al 2013 Spain	Community sample 65 years+	XS (cross sectional) association between mood disorders and pain.	553	1) Prime-MD (primary care evaluation of mental disorders) 2) Pain of uncertain origin measured on VAS scale.	Association between mood disorder prevalence and pain intensity.	Pain intensity is related to mood disorders.	Clinicians should look for depression in presence of poorly explained pain.	Level III-2
Andersson 2012 UK	Community sample 65-82 years	Impact of CBT 6 sessions on pain report, mood and function.	21	1) CSQ: coping strategies questionnaire 2) MPI: multidimensional pain inventory 3) PAIRS: pain impairment relationship scale 4) HADS: hospital anxiety and depression scale 5) ASI: anxiety & sensitivity index 6) QOLI: quality of life inventory	Significant treatment effect in perceived ability to function despite pain.	Function increased and quality of life improved when pain meaning was reframed and locus of control for pain impact was increased.	The Ax of function alone is not a good guide to pain levels as personal beliefs are impacting on this. Ax of multi-dimensional aspects of pain, mood and function required at all times.	Level II
*Baker et al 2011 USA	Community sample, African American 50-96 years	Association between pain, demographic factors, social variables and depression.	247	1) MPQ: McGill pain questionnaire 2) PRI: pain rating index 3) CES-D: centre for epidemiological studies depression scale	Pain is associated with social support, life satisfaction and depression.	Those with greater pain tended to report more depression and receive more social support As pain increased, life satisfaction decreased with subsequent	It is important to identify potentially modifiable risk factors (i.e. social support and life satisfaction) for pain when assessing pain in OAs.	Level IV

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
				4) MHLC: multidimensional health locus of control 5) LSI-Z: life satisfaction inventory 6) ISSB: inventory of socially supportive behaviours.		exacerbating effects on depression.		
*van Baarsen 2009 Holland	Community sample, responders to advert in Journal of Association of Voluntary Termination of Life. Mean age 76 years, 52% 60-80 years, 1% <40 years	Associations of reported 'suffering', loneliness, pain, mood and euthanasia choices.	175	Postal questionnaire to advert respondents: 1) Self report checklist on disease diagnoses 2) Dutch loneliness scale 3) Self-report questionnaire on 'emotional pain' and 'somatic pain' with multiple choice scale answers 4) Questions on opinions of euthanasia, multiple choice scale answers.	More intense loneliness experience resulted in more serious physical pain experience (82%) and more emotional problems (85%) reported (referred to in this paper as 'somatic pain' and 'emotional pain').	Type and intensity of pain impacts on how pain is rated in terms of loneliness and emotional suffering.	Pain experience should be assessed alongside social factors like loneliness and mood as each presents a risk to the other increasing.	Level IV
Bergh et al 2003 Sweden	Community sample 70 years	XS association between depression and pain.	241	1) CES-D (Centre for Epidemiological Depression Scale) 2) Pain questionnaire (present, previous, how often and location of hurt, ache or pain) 3) Range of psychometrics (including synonyms; digit span, forward & backward; identical forms; figure classification; block	Depression more closely associated with pain in men (p<0.01).	Association may be due to women using anti-depressants.	Screen for depression in an elderly patient who presents with pain and especially in men.	Level IV

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
				design; digit symbol; Thurstone Picture Memory Test)				
Bunting-Perry 2010 USA	Parkinson disease (PD) patients in veteran rehabilitation units, mean age 75 years, 98% male	Association between pain experience, severity and interference, and depression, pain attention and pain beliefs.	125	1) BPI: Brief Pain Inventory 2) range of other psychometric measures (dissertation/thesis - full paper not found)	46% variance in pain interference was explained by pain severity, depression and pain beliefs.	Supporting the Rugh model of a multifaceted, multidimensional psychological components explanation of pain.	Pain assessment generally should move beyond pain as a sensory symptom and examine pain from a bio psychosocial perspective.	Level IV
Carrington Reid et al 2003 USA	Community sample ≥70 years	XS association between depression and disabling back pain	754	1) CES-D Scale 2) MMSE 3) Back pain in last 12 months (disabling if led to activity restriction)	Depression associated with back pain lasting 1-2 months (OR:2.3; 1.2-4.4) and ≥3 months (7.8; 3.7-16.4)	Depressive symptoms are a strong risk factor for disabling back pain in community-dwelling older adults.	Important to identify potentially modifiable risk factors for pain onset when assessing older adults.	Level III-2
Catananti & Gambassi 2010 USA	Acute post operative ward 65 years+	Literature review	-	Quantitative and qualitative assessment methods were reviewed in acute settings.	Feasibility and validity of: NRS (Numeric Rating Scale), VRS (Verbal Rating Scale) & VAS (Visual Analogue Scale). Some evidence for MPI & PPI (Present Pain Inventory); GPM (Geriatric Pain Measure) for ambulatory OAs reliability for psychological function and pain severity.	At any time a quantitative and qualitative assessment is required and a patient history is essential in gaining verbal information and discriminating between acute and chronic pain experience.	Age differences in postoperative pain are better captured by verbal descriptions of pain than non-verbal measures of intensity. Mood as a variable was not identified as the most appropriate assessment of pain in postoperative OAs, however the use of GPM is recommended.	Level I
Chan et al 2014 Hong Kong	Community dwelling older adults applying for	Secondary data analysis	312	Pain was evaluated by two items: pain frequency and pain intensity (interRAI,	Depression associated significantly with pain. However, loneliness	Findings support the positive relationship between depression and pain in terminally ill	To ensure optimal pain management for patients in palliative and end-of-life care, assessment and intervention	IV

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
	long-term care service (terminally ill)			2014) Depression based on a validated negative mood scale that measures the intensity of nine negative mood symptoms (Leung et al, 2012)	moderated this relationship, and for participants who felt lonely, depression and pain were no longer significantly associated.	older adults. Feeling lonely may affect the tendency to report pain.	should focus on the impact of psychosocial factors such as loneliness, and how they may affect elders' reporting of pain.	
Chan et al 2015 Hong Kong	Community dwelling older adults applying for long-term care service (terminally ill)	Secondary data analysis	12, 402	Pain was evaluated by two items: pain frequency and pain intensity (interRAI, 2014). Depression based on a validated negative mood scale that measures the intensity of nine negative mood symptoms (Leung et al, 2012) Comm. difficulty based on sum of two items: (1) ability to make oneself understood and (2) ability to understand others Total scores ranged from 0 (no difficulty) to 8 (severe difficulty).	Depression associated with increased pain Communication difficulty found to moderate relationship between depression and pain Pain scores increased more among older adults who experienced communication difficulty coupled with depression, compared to participants with no communication difficulty	Health care professionals needs to be aware of the effects of communication difficulty on pain report, particularly in individuals who also experience depression	Psychosocial interventions could help minimise pain in older adults with communication difficulties	
Craft & Prahlow 2011 USA	Nursing home age 70s (F) with AD, multi-	Association between distress, pain vocalisations and behaviours,	1	A post death review of which assessment techniques and best care guidelines should have	Associations noted between any changes in mental status, social withdrawal, aggression,	Review of 12 behavioural pain assessment tools recommends:	Clinicians should observe and monitor a range of patient expressions and behavioural factors so as to be able to	Level IV

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
	infarct dementia, depression and anxiety	and fatal faecal impaction in OA with cognitive impairment and mental health problems.		been used: staff should have observed and monitored behavioural and facial expression changes, and vocalisation changes.	vocalisation, body movements or interpersonal interactions, and pain changes.	PACSLAC (pain assessment checklist for seniors with limited ability to communicate); Doloplus-2; PAINAD (pain assessment in people with dementia).	recognise changes. Predisposing mental health problems should never preclude the assumption that pain is the cause of changes in these areas of behaviour.	
Docking et al 2011 UK	Community and care home sample 75 years+	Association between various risk factors and the prevalence and onset of back pain.	1174	1) Structured interview: patient history, pain history social and psychological factors and impact on levels of functioning 2) MMSE: Mini Mental State Examination 3) CAMDEX: Cambridge Assessment Mental Disorders of the Elderly examination 4) IADL: Instrumental Activities of Daily Living	Poor self-rated health, depressive symptoms and a previous episode of disabling back pain are predictors for future back pain onset.	Indicators of physical health and depression are important predictors of back pain onset; social contact is not a marker for increased back pain; disabling back pain prevalence rises as age increases in those 75 years+.	Depression is shown here to be an independent predictor of back pain onset and therefore should be routinely screened in OAs, especially in 75 years+.	Level IV
Halri et al 2013 Australia	Community sample 65 years+	Association between gender, chronic pain, impact of pain and pain severity with physical disability.	8881	1) Structured questions re activities of daily living 2) 6 questions from K6 questionnaire re psychological distress 3) Self rated health report.	Women were older, had more social activities, and a higher proportion had psychological distress than men. Prevalence of chronic pain, severity of pain, and pain related interference with activities were all greater in women than men. No gender difference in relationship between chronic pain and physical disability.	Psychological factors mediated in the relationship between chronic pain and physical disability, not gender, despite differences seen in gender experience of pain, levels of distress and engagement in activity.	Assessment of physical disability and psychological distress should be part of the routine examination in older men and women with chronic pain.	Level IV

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
*Hart-Johnson & Green 2010 USA	Sample tertiary care pain centre; patients and volunteers, females 60 years+	Comparison between women seeking chronic pain treatment, control with and control without pain.	104	Clustering classification technique formed 3 groups: 1) 'Healthy' 2) Poor physical health and mental health 3) Poor physical health.	Disability and pain severity contribute to specialist service access; there is a subgroup with mental health problems who do not access as readily.	Mental health was an obstacle to receiving treatment at the pain service.	Presence of mental health problems should not preclude the assessment of or treatment of chronic pain.	Level III-2
Hartvigsen et al 2008 Denmark	Community sample 100 years	XS association between depression and back/neck pain.	256	1) One month back pain/neck pain prevalence (back pain, acute LBP or lumbago - self reported) 2) Modified version of Cambridge Mental Disorders Examination (CAMDEX)	Depression is associated with pain (OR 3.0, 1.2-7.2)	Those reporting depression had a threefold risk of reporting back pain in the last month.	Must address those psychosocial factors associated with pain.	Level IV
Hong et al 2012 China	Inpatient hospice sample 65 years+	Exploring the experience of older Chinese adults in palliative care with life-threatening cancer.	15	Semi-structured interviews, collation of qualitative data, discourse analysis.	OA common experience of dying within this culture and setting: being a burden, loss of control and independence, fear of pain, distress about family and own future.	Communication about diagnosis, treatment plan and prognosis directly impacts on beliefs about health, being a burden and levels of distress.	Importance of sharing the 'truth' about diagnosis regardless of desires to 'protect' older person; impact on distress and negative experience of pain and illness with not communicating.	Level IV
Hoover et al 2010 USA	Long-term nursing home sample 65 years+	Association between depression, pain, physical co-morbidity and facility characteristics at intervals in first year of admission.	4216 homes 634,060 patients	1) MDS: Minimum Data Set. 350-item health status questionnaire, nurse administered to a guideline standard every 3 months (physical, cognitive and psychosocial functioning, diagnoses and treatments) 2) Physician diagnosed depression as recorded in medical notes from 3 monthly	32.8% had depression diagnosed at admission and a further 21.6% later during the first year; pain and physical co-morbidity were positively associated with depression in the first year; prior institutionalization was associated with depression at admission.	More than half long-term nursing home OAs were shown to have depression; other factors and demographics became less associated with depression onset over time post-admission, whereas presence of pain became a more important predictor.	Regular assessment and monitoring of depression symptoms should occur for all long-term nursing home residents to ensure early recognition and treatment; assessment and management of pain could prevent later depression onset.	Level IV

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
				examinations.				
Huang & Carpenter 2011 UK	Nursing homes sample 65 years+	Review reliability of depression rating scale (DRS) in nursing home sample; find characteristics associated with resident depression.	499 patients 9 homes	1) DRS: Depression Rating Scale 2) InterRAI LTCF: Inter Rating Long Term Care Facilities standardised questionnaire.	67.5% not depressed; 32.3% showed depression symptoms; correlation of depression symptoms with never having married, COPD, pain and trouble sleeping.	DRS useful for screening with cognitive impairment; DRS with interRAI LTCF useful for screening for characteristics linked to depression, i.e. pain, which can facilitate improved LT facility care.	Use of DRS alongside interRAI LTCF as standard assessment tools to screen for depression and pain which are shown to be correlated.	Level IV
Jacobs et al 2006 Jerusalem	Baseline and 7 year follow-up 70-77 years	1 XS association between depression and pain 2. Longitudinal association between loneliness and pain.	277	1) Questions on duration, frequency, severity and site of back pain (BP). Chronic (CBP) was defined as reporting BP on a frequent basis. 2) Do you ever feel lonely? (never; very rarely; occasionally; often) 3) Brief Symptoms Inventory (Depression)	1. Depression associated with BP (p=0.002) 2. Loneliness significantly predicted CBP (4.6; 1.2-17.7)	CBP was associated with predominantly psychosocial factors.	With elderly people with BP likely to be lonely, home bound and isolated interventions should take place at a multidisciplinary level.	Level III-2
Lavin & Park 2011 USA	Community sample 65 years+	XS study to identify factors associated with depressive symptoms in older adults receiving opioids for chronic pain (CP)	163	1) CESD-10 2) Brief Pain Inventory (BPI) 3) Older American Resources and Services ADL (OARS ADL) 4) Spirituality well-being scale (SWBS) 5) Enrich Social Support	39.3% with CP had depressive symptoms; 4 factors were associated with higher depressive symptoms: 1) Higher pain severity (p<0.0005) 2) Lower levels of functional status (p<0.01) 3) Lower levels of	Depression is a pain comorbidity that is modifiable. Under-treated depression in older adults with pain may explain poor improvement in pain and functional status despite opioid dosage.	Depression should be evaluated in older adults with pain. Improving depression, disability and social isolation may improve efficacy of opioids.	Level IV

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
				Instrument (ESSI)	spirituality (p<0.01) 4) Lower levels of social support (p<0.01).			
*McNamara et al 2010 USA	Movement disorders in outpatient clinic sample. Control mean age 61.8 SD 5.5, right onset Parkinson's disease (PD) 75.7 (7.7), left onset PD 67.1 (9.8)	Association between mood and pain in PD as compared with mood and pain in non-PD.	34	1) Self-report symptom checklist and likert scale 2) DASS: Depression and Anxiety Stress Scale 3) McGill short form	PD (both R&L) reported higher pain intensity and overall pain than control. Significant association between more mood reporting and higher pain rating in LPD. This association not found in RPD.	Suggestion of association between mood and pain in PD, maybe related to the differential contribution of right/left hemisphere processing of mood.	Further research required to explore relation between mood and pain in PD. Importance of assessing mood alongside pain with PD patients.	Level III-2
Mueller et al 2010 Germany	Community sample 72 years+	Explore prevalence of health problems in OAs, compare use of STEP assessment tool with GP consult only assessment.	189	1) STEP: Standardized assessment for Elderly Patients in a primary care setting (44 item, self-report tool with structured interview, nurse administered) 2) Comparison with GP independent assessment of patient and subsequent interventions planned.	A median of 11 health problems was found per patient using STEP. Of these a median of 2 health problems identified by STEP was 'new' to the GP.	75% reported pain in the last 4 weeks and of these 9.2% were 'new' symptoms to GP. Highest % interventions of health problems, of those identified by STEP tool: missing/lapsed immunization 57%, anxiety 50%, depression 39%, cognitive impairment 38%.	Using a geriatric assessment in primary care, patients disclose relevant health problems and treatment needs that GPs may otherwise overlook, in particular pain in last 4 weeks, anxiety in last 2 weeks and depression in last 4 weeks.	Level III-2
Mystakidou et al 2013 Greece	Community sample, cancer patients 65 years+	XS association between depression and pain.	92	1) Geriatric Depression Scale (GDS) 2) MMSE (Mini Mental State Examination) 3) Katz Index of ADL	MDASI Factor 1 was a risk factor for geriatric depression (Factor 1 – enjoyment of life, walking, relationships with people, general	Enjoyment of life, walking, relationship with people, general activity, sadness and pain are strong independent	Need to assess and treat depression in older patients with cancer.	Level IV

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
				4) The MD Anderson Symptom Inventory Assessment (MDASI).	activity, sadness and pain).	predictors of depression in the elderly.		
*Sun et al 2011 China	Community sample 60 years+	XS association between living arrangements and health related QoL.	9711	1) EQ-5D inventory (health related QoL) 2) National Household Health Survey	Living alone predicted pain/discomfort and depression / anxiety. Lower odds on pain/discomfort if regular contact with neighbours/friends/family.	OA living alone are vulnerable and social interaction may reduce this negative effect.	Policies should aim to improve neighbourhoods, social interactions and encourage older adults to take part in social activities.	Level III-2
Tsatali & Gouva 2011 Greece	Community sample 65 years+	XS association between pain anxiety and pain experience.		1) Pain Anxiety Symptom scale (PASS-20) 2) Geriatric Pain Measure (GPM)	All subscales of PASS-20 associated with presence of pain (p<0.05).	Pain anxiety has negative impact on pain experience.	Non-pharmacological interventions recommended to focus on pain anxiety.	Level IV
*Tse et al 2012 China	Nursing homes 60 years+	XS relationship between pain and psychological well-being.	302	1) Geriatric pain assessment 2) Subjective happiness scale 3) life satisfaction index 4) UCLA loneliness scale 5) Geriatric Depression scale (GDS)	Pain group reported significantly more loneliness and depression (p<0.05). Happiness and life satisfaction was higher in non-pain group.	Pain is complex and must consider all components of pain including physical, psychological and social.	Need to improve the nursing home environment for older adults and increase nurse training.	Level IV
*Vankova et al 2008 Czech Republic	Residential care facility 60 years+	XS association between functional status and depressive symptoms.	308	1) GDS 2) MMSE 3) The Barthel Index 4) The get up and go test 5) WHO QoL – BREF	Functional limitations by pain are associated with depressive symptoms.	There is a relationship between functional status and depression.	Identifying functional limitations can help clinicians identify those at risk of depression.	Level IV
Weaver et al 2009	Community sample	Association between pain	1013	1) Bilingual structured interviews to gain	64.7% reported pain within 4 wks; 49.7%	High prevalence of pain and pain interference	Importance of assessing pain and depression symptoms in this	Level IV

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
USA	74-100 years	severity and functional disability in older Mexican Americans.		<ul style="list-style-type: none"> history and demographics 2) SPPB: Short Physical Performance Battery (measures of mobility and frailty) 3) 2 pain items from SF-36 4) IADLs 5) MMSE 6) CES-D 	reported pain interference with daily activity; pain severity significantly associated with gender, education, co-morbidity, IADLs, SPPB, frailty and depressive symptoms.	among older Mexican Americans. Especially high among women, low education, disabilities and co-morbidity, low mobility, frailty and depression.	population, particularly if other demographic factors and co-morbidities are known.	
*Wu et al 2010 China	Community sample 60 years+	XS association between depression and health problems.	177	<ul style="list-style-type: none"> 1) CES-D (Centre for Epidemiological studies – Depression scale) 2) What are the health problems that limit your activities? 3) ADL 4) Social network measure – How frequently do you see/talk/meet friends and relatives? 5) Do you exercise regularly? 	Arthritis, back and neck problems are associated with increased depressive symptoms.	Pain contributes to depressive symptoms.		Level III-2
Wylde et al 2011 Canada	Total knee and total hip replacement patients (TKR, THR) 65 years+	Determinants of persistent pain after TKR and THR.	632 TKR 662 THR	<ul style="list-style-type: none"> 1) WOMAC 2) Pain detection Questionnaire 3) SF McGill Pain questionnaire 	Major depression and pain elsewhere significantly determined persistent post-surgical pain (<p0.001).	Depression and co-morbid pain contributes to persistent pain following surgery.	Interventions should identify those with depressive symptoms to alleviate pain experience.	Level III-2
Zarit et al 2004 Sweden	Nursing home, assisted living facilities	Assess self-reported pain in oldest old. Longitudinal	190 at baseline, 98 at follow-up	<ul style="list-style-type: none"> 1) Structured interview re daily functioning etc 2) 5-point Likert Scale re frequency and severity 	Prevalence of pain at baseline was 34%, and 40% at follow-up; pain was related to sleep	Pain in over 85yrs reported here was lower prevalence than typically reported in	Longitudinal study is useful. Only further questioned on experience of pain if participant indicated they had pain in the first structured	Level III-2

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations	Level of evidence
	and community setting 86-92 years	study: associations with other measures of health and functioning over 2 years.		of pain 3) indication of pain on body map diagram 4) CES-D 5) MMSE 6) IADLs	difficulties, medication usage, global subjective health, depressive symptoms and mobility	studies of 65yrs+, although the correlations and types of pain (chronic joint ache) is similar	interview – maybe not eliciting all the experience of pain in this population? Importance of screening for depression alongside pain.	

17.8. Pain assessment in cognitive impairment

Author(s), date, country	Setting	Method	No of participants	Assessment tool used	Correlation reported	Overview	Recommendations

Author(s), date, country	Setting	Method	No of participants	Assessment tool used	Correlation reported	Overview	Recommendations
Brown 2010 Canada	Resident Assessment Instrument (RAI) on two occasions	RAI	Survey of RAI data 189 persons residing in the facility over the course of the 12-month period.		No	Some residents did not receive analgesic despite being recorded in the RAI as having pain.	Avoid a one-size-fits all approach to long-term health monitoring. Support the continued development of tools to address the myriad of issues related to pain and pain expression.
Chang et al 2011 Korea	Concept analysis						
Cheung & Choi 2008 New Zealand	Nursing home	Pain assessment during care	50 residents from 4 facilities	PACSLAC	The average percentage of agreement was 0.89 and the Pearson correlation coefficient was 0.83 ($p < 0.01$) for the total PACSLAC scores rated by the researcher and the caregivers.	A PACSLAC rating was completed independently by a medical undergraduate researcher and a caregiver following. The caregiver attended to the patient's usual personal care with the researcher observing in close proximity.	PACSLAC has good inter-rater reliability when it is used by caregivers. Future studies with larger samples and collaboration between different centres will be useful in providing normative PACSLAC values in New Zealand.
Cohen-Mansfield 2006 USA	Nursing home	PAINE	(a) 80 residents from a single home (b) 91 residents from two separate homes	Reliability and validity were explored in 2 studies	Cronbach a was 0.75	PAINE shows adequate internal consistency and both Inter-rater and test-retest reliability. It also shows adequate receiver operating characteristic curve results and reasonable correlations with the existing measures of pain in persons with dementia.	The validity results suggest that this assessment could be a useful tool in detecting pain in persons with dementia.
Curtiss 2010 USA	Review						
Delac 2002 USA	Review						
De Waters 2003 USA	Review						

Author(s), date, country	Setting	Method	No of participants	Assessment tool used	Correlation reported	Overview	Recommendations
De Waters et al 2008a USA	Descriptive correlation	Observation, interviews and review of medical records. Orthopaedic hospital patients	25 patients, 12 cognitively impaired (CI)	NRS and PAINAD		Positive correlation between PAINAD and self report measures.	Simple to use, but PAINAD requires larger scale studies with BME groups.
De Waters et al 2008b USA	Hospital	Descriptive correlation	Training of staff and video observations.	25 participants	Pearsons	Video observations of staff during care delivery.	Supports reliability and validity of PAINAD.
Epperson & Bonnell 2004 USA		Guidance					
Ersek et al 2010 USA	Nursing home	Cross sectional descriptive study	60	CNPI and PAINAD MDS		Video cameras recording use of both tools to compare reliability and validity.	Both tools need more research.
Feldt 1998 USA	3 nursing homes	Secondary analysis of data	Identification of pain amongst nursing home populations	38 residents		Pain is a frequent symptom amongst nursing home residents who have one or more potential causes.	More, larger scale studies needed.
Feldt 2004 USA	Review						
Gnass et al 2012 Germany	Nursing home	Pre-test/post test	14 homes, 151 caregivers	Self-report and observation	No	A survey to assess how pain is documented and barriers to implementation.	Nursing homes need to develop pain management strategies appropriate for population.
Herr 2010 USA	Review						
Herr & Garand 2001 USA	Review						
Herr et al 2006 USA	Review						
Herr et al 2010 USA	Concensus recommendations						
Holen et al		Hospital NRS and	51 nursing	NRS and Doloplus		There was no association between the	The results do not support the

Author(s), date, country	Setting	Method	No of participants	Assessment tool used	Correlation reported	Overview	Recommendations
2007 Norway		Doloplus	home residents and 22 hospital patients. The ratings were based on information from the medical record, reports from nurses and patients (if possible) about pain during the past 24 hours, and a clinical examination.			Doloplus-2 and the expert's pain ratings ($R^2 = 0.02$). There was an association ($R^2 = 0.54$) between the expert's ratings and the Doloplus-2 scores in a subgroup of 16 patients assessed by a geriatric expert nurse (the most experienced Doloplus-2 administrator). The inter-rater reliability between the Doloplus-2 administrators assessed by the intra-class coefficient was 0.77. The pain expert's ratings were compared with ratings of two independent geriatricians in a sub sample of 15, and were found satisfactory (intra-class correlation 0.74).	validity of the Doloplus-2 in its present version and they indicate that it demands specific administration skills.
Horgas & Miller 2008 USA	Case study	PAINAD	1 patient	Pain at rest and on movement	No	Use of PAINAD with one patient	The PAINAD scale has not been evaluated for use in people with mild or moderate dementia. Some of the PAINAD scale behaviours, such as breathing, may be less indicative of pain in cognitively intact older adults.
Hsu et al 2007 USA	Dental	Prospective comparative study	22			Faces, VDs and physiology	Facial expression most sensitive
Husebo et al 2007 Norway	Development of MOBID	26 nursing home patients	Pain intensity rated during regular care. Raters also observed videos of encounters	MOBID		Internal consistency of the final version and inter-rater reliability of pain intensity scores were high, although pain behaviour indicators demonstrated varying degrees of inter-tester reliability. Indications were provided that the guided movements can be used to disclose pain behaviour in a bedside situation, although video watching seemed to yield higher pain intensity scores.	Common behaviour related to dementia, such as rocking, yelling, or a sad look, was not considered expressions of pain in MOBID. However, the issue of discrimination between behaviour caused by dementia, and caused by dementia and pain, is difficult to handle and was a major concern in the present study of MOBID development.

Author(s), date, country	Setting	Method	No of participants	Assessment tool used	Correlation reported	Overview	Recommendations
Hutchison et al 2006 USA		80 participants	Evaluate a clinician-administered assessment tool, PAINAD, in patients with cognitive impairment	PAINAD		Opioid use was significantly higher ($P < 0.003$) and the rates of reported unknown pain were significantly lower ($P < 0.01$) in the group using the PAINAD instrument compared to the control group of patients with cognitive impairment. There were no noted differences in opioid-induced adverse reactions in either group.	
Jordon et al 2009 UK	Nursing home	PAINAD	79 residents	PAINAD	No	3 observations using PAINAD.	PAINAD is a sensitive tool for detecting pain in people with advanced dementia, but has a high false positive rate, frequently detecting psychosocial distress rather than pain. PAINAD can be used to assess whether pain management strategies have been successful.
Jordon et al 2012 UK	Observational	PAINAD and DisDAT	79 nursing home residents observed	PAINAD and DisDAT	No	PAINAD shown to have a high sensitivity (92%) but low specificity (62%) for pain. We have shown that the DisDAT could be used to identify distress caused by pain too. Furthermore, we have shown that both the PAINAD and DisDAT demonstrated a significant change in scores in response to the treatment of pain in people with severe dementia ($p = 0.008$).	Both tools are useful. However, the pain tool also picks up distress, which is not caused by pain. It could potentially lead to false ascriptions of pain. The distress tool picks up a broader array of signs, which may be useful both in practice and in research.
Kaasalainen & Crook 2004 USA	Descriptive	Ability to complete self report measures	150 nursing home residents. Completion rates of pain assessment tools and self-report skills across groups of residents	FPS, NRS, PPI		The PPI and NRS are good choices to use to assess pain in those residents without cognitive impairment because these residents are able to complete and understand the principles underlying these tools. The FPS is more time consuming to implement and, from the results of this study, is a poorer choice because even the cognitively intact elderly demonstrated	Some support for the use of self-report tools in seniors.

Author(s), date, country	Setting	Method	No of participants	Assessment tool used	Correlation reported	Overview	Recommendations
			with varying levels of cognitive impairment.			some difficulty with the interpretation of the scale.	
Keane et al 2010 Ireland	Survey	NRS, VAS, VRS, NRS, FRS	58 consultant geriatricians in the Republic of Ireland.		No		
Kunz et al 2007 Germany	Community	Observation of facial expression during pressure.	42 people with dementia and 54 healthy volunteers	Facial Action Coding System (FACS)	No	Facial responses in 42 demented patients and 54 aged-matched healthy controls to mechanically induced pain of various intensities. Video taped facial expression recorded with pressure pain.	The facial expression of pain has the potential to serve as an alternative pain assessment tool in demented patients, even in patients who are verbally compromised.
Lane et al 2003 USA	Review			PAINAD			
Lane et al 2003 USA	Review						
Lints-Martindale et al 2011a Canada	Long term care	Observational 4 nursing homes. A total of 85 participants were filmed for all pain conditions (ie baseline, during influenza vaccination and during movement-exacerbated pain).	136	Assessment of Discomfort in Dementia protocol (ADD), CNPI, Non-Communicative Patients' Pain Assessment Instrument (NOPPAIN), Pain Assessment for the Dementing Elderly scale (PADE), PAINAD, and PACSLAC 2.	Kappa	Filmed during 2 painful procedures. Six observational pain measures (PAINAD, PADE, PACSLAC, ADD, NOPAIN, CNPI). All measures were able to differentiate between pain and baseline conditions. Reliability and validity varied across measures. Most measures continued to differentiate between pain and baseline states after items that overlap with delirium were eliminated.	Our findings support the utility of comprehensive coverage of the AGS-recommended pain assessment domains. PACSLAC recommended. A shortened form is needed.
Lucas et al 2012 Germany	Review						

Author(s), date, country	Setting	Method	No of participants	Assessment tool used	Correlation reported	Overview	Recommendations
Mahoney & Peters 2008 Australia	Nursing home	Pleasant and aversive stimuli – use of Mahoney Pain Scale (MPS)	112 participants from 16 nursing homes	MPS	No	The MPS demonstrated adequate Inter-rater reliability and internal consistency. As predicted, participants experiencing pain and/or agitation obtained higher MPS scores during the aversive activity.	The clinical impressions of nurses who trialed the tool were favourable; they reported that it seemed accurate and easy to use. Thus, the MPS may be useful for assessing pain in dementia.
Manias et al 2011 Australia	2 hospitals	Intervention study	192 patients	VAS, FPS, McGill, PAINAD, Abbey		Looking at the use of pain tools following an education intervention.	Education improved practice.
Manz et al 2000 US	Cross-sectional study used face-to-face scripted interviews and chart review.	Pain was measured with the Memorial Pain Assessment Card verbal subscale, FACES, COOP pain subscale, a numeric rating scale, and the Present Pain Intensity subscale of the McGill Pain Questionnaire.	Face-to-face scripted interviews and chart review.	Memorial Pain Assessment Card verbal subscale, FACES, COOP pain subscale, a numeric rating scale, and the Present Pain Intensity subscale of the McGill Pain Questionnaire.	Intraclass correlation > 0.74	Most elderly, with normal to moderately impaired cognitive functioning, as well as some severely impaired elderly, are capable of using self-report tools to rate their pain.	Further research is needed to determine if the findings can be replicated.
Mezinskis et al 2004 USA	Formal and informal pain assessment methods	Midwest long term care (LTC) facilities in three States. It consisted of two samples: Sample A was 160 direct caregivers (35 RNs, 41 LPNs, and 84 CNAs). 307 cognitively impaired (CI) older adults with chronic painful illnesses residing in dementia units	Wong-Baker Faces Scale (WBFS); 5.7% used the McGill Pain Questionnaire (MPQ)			Over 60% of RNs, with fewer LPNs and CNAs, used formal pain assessment tools. Patient records identified that 77.5% of cognitively impaired patients had a regularly ordered pain medication and 91% had a PRN pain medication order. Thirty percent of patients received at least one PRN medication in a 1-week period. No one diagnosis was significantly associated with a greater tendency for PRN pain medications to be administered, with cancer a possible exception. Eighty-two percent of cognitively impaired patients had a PRN order for	Educational imperative to increase the use of formal instruments and informal pain assessment strategies by all direct caregivers seems to be the first step in more effective pain management. A very important second step would be to link all direct caregivers' use of skilful pain assessments to pain medication administration. LTC nurses have PRN pain medication orders available. CI older adults with impaired communications skills are in need of a strong advocate, who assesses

Author(s), date, country	Setting	Method	No of participants	Assessment tool used	Correlation reported	Overview	Recommendations
		in 14 LTC facilities.				acetaminophen. Using minimum data set (MDS) criteria, this study found that patients with greater communication impairments received fewer pain medications.	skillfully, and then intervenes with medication for pain control.
Ni Thuathail & Welford 2011 UK	Review						
Pautex et al 2006b Switzerland	Prospective clinical study, hospital	The verbal, horizontal visual, and Faces pain scales	129 severely demented patients	HVAS, VRS, FPS and Doloplus	Spearman rho correlation coefficient Moderate to strong correlation between self assessment tools ((r)=0.45-0.94; P<.001).	Four scales tested (Verbal, Faces and Observation scale). Scales administered in randomized order. A nursing team independently completed an observational pain rating scale. Main outcomes were comprehension (ability to explain scale use and correctly indicate positions for no pain and extreme pain on two separate occasions), inter- and intra-rater reliability, and comparison of pain intensities measured by the different scales. All scales understood in mild to moderate dementia.	Comprehension rates were highest for the facial scale (63 (49%), P5.02) and lowest for HVAS (37 (29%), P5.01) compared with the VRS (50 (39%)). Presence of depression was not predictive of comprehension. Nearly two-thirds of hospitalized elderly patients with severe dementia were able to use a self-assessment pain scale reliably.
Pickering 2010 France			Translation of Doloplus into 5 languages		Correlation		Strong correlation in English, Italian, Portugese and Spanish Samples. Reliable and easy to use.
Rainfray et al 2003 France	Hospital	Survey	Survey of staff	221		Doloplus	
Schiepers et al 2010 USA		Disdat, PACSLAC and FPS	98 observation sessions	Computerised version of all 3 scales	No	An electronic pain and discomfort assessment instrument for clinical practice has been developed and tested. It has been demonstrated to work in real world situations.	Electronic behavioural assessment tools could be more intuitive, valid, usable and attractive to use. In the case of pain/discomfort monitoring, caregivers are stimulated to perform more frequent pain assessment sessions.

Author(s), date, country	Setting	Method	No of participants	Assessment tool used	Correlation reported	Overview	Recommendations
Warden et al 2003 USA	In-patient dementia care	Instrument development	19 residents, 6 staff, 25 case notes			PAINAD compared against DISDAT and 2 VAS scales by trained experts.	PAINAD simple, reliable and valid, but sample small and only includes males.
Zwakalen et al 2006 Netherlands	Systematic review						
Zwakalen et al 2006 Netherlands	Observational design	PAINAD, PACSLAC, and DOLOPLUS-2	Two raters simultaneously assessed 128 nursing home residents for pain during influenza vaccination and care situations.	PACSLAC, PAINAD and DOLOPLUS-2	No	The PACSLAC was valued as the most useful scale by nurses. The PAINAD scale had lower scores for clinical usefulness in this sample. The Dutch version of the DOLOPLUS-2 was considered more difficult to use but showed acceptable psychometric qualities in terms of the issues assessed, except for the 'psychosocial reactions' subscale.	Future studies also need to focus on the implementation of PACSLAC in nursing practice.
Zwakalen et al 2012 Netherlands	Exploratory descriptive observational study	PACSLAC	Regular pain assessment using an observational scale as an intervention was evaluated. 40 nursing home residents.	The feasibility of regular pain assessment using an observational scale.	No	Although a high completion rate was obtained, supporting the clinical utility of the PACSLAC-D, adequate pain registration (90%) did not result in the frequent use of pain relieving nursing interventions during the 6-week implementation period.	Providing nursing staff with adequate pain assessment tools alone is not sufficient to change pain management practices.

17.9. Pain assessment guidelines for older adults

Author(s), date, country	Setting	Method	n	Assessment tool used	Correlation reported	Overview	Recommendations
American Geriatrics Society (AGS) 1998 USA		Expert consensus and review of existing literature				First clinical practice guideline on the management of chronic pain in adults aged 65 years and over.	Pharmacological therapy is most effective for chronic pain in older persons when combined with non-pharmacologic strategies such as education, cognitive behavioural therapy and exercise.
AGS 2002 USA		Expert consensus and review of existing literature				Guidelines divided in four sections: assessment of persistent pain; pharmacologic treatment; non-pharmacologic treatment, and recommendations for health systems for older adults. Includes information on pain assessment in cognitively impaired adults.	Each of the four sections contain the panel's specific recommendations for improving clinical assessment and persistent pain management but serve as a guide to practice and should not be used in lieu of critical thinking, sound judgement and clinical experience.
AGS 2009 USA		Literature review and the consensus of experts familiar with clinical pain management in older people.				AGS (2002) guidelines relating to assessment and non-pharmacologic treatment still relevant but provides updated information on pharmacological pain management.	Specific recommendations include low-dose initiation of medication and slow titration of opioid therapy, constipation prophylaxis, and frequent monitoring of patient responses to therapy.
Australian Pain Society 2005 Australia	Residential aged care settings	Draws on international best practice to inform the guidelines				Includes strategies and guidance to assist in identifying and assessing residents' pain effectively across a range of areas, including: managing pain using a combination of	A multifaceted approach is needed to promote the implementation of pain management strategies in aged care facilities.

						pharmacological and non-pharmacological treatment options; examines issues of quality management and organisational structure related to pain management.	
British Pain Society & British Geriatrics Society 2007 UK		Based on a review the current evidence in the literature				Comprehensive guide to the methods of assessment and the tools available with an emphasis on chronic pain management.	For pain assessment in adults with mild to moderate dementia, numerical and verbal rating scales are useful. Specific behavioural scales should be used: the Abbey Pain Scale is useful in severe cases.

DRAFT FOR CONSULTATION

18. References

18.1. Glossary of terms

Registered Nurses' Association of Ontario (RNAO) (2007) *Assessment and management of pain in the elderly: Self-directed learning package for nurses in long-term care*. Available from: http://www.pulserx.ca/docs/Assessment_and_Management_of_Pain_in_the_Elderly.pdf [Accessed 22.7.14]

18.2. Methodology

British Pain Society (2010) *Publication Process Manual December 2010 v1.2*. London, British Pain Society. Available from http://www.britishpainsociety.org/pub_process_manual.pdf [Accessed 7.07.2014]

Liddle, J., Williamson, M., Irwig, L (1996) *Method for Evaluating Research Guideline Evidence*. Sydney,

National Health and Medical Research Council (1999a) *How to review the evidence; systematic identification and review of the scientific literature*. Canberra, NHMRC Available from http://www.nhmrc.gov.au/files_nhmrc/publications/attachments/cp65.pdf [Accessed 8.07.2014]

National Health and Medical Research Council (1999b) *A guide to the development, implementation and dissemination of clinical practice guidelines*. © Commonwealth of Australia, Canberra, NHMRC

Scottish Intercollegiate Guidelines Network (2011) *SIGN 50 A guideline developer's handbook*. Edinburgh, SIGN Available from <http://www.sign.ac.uk/guidelines/fulltext/50/index.html> [Accessed 8.07.2014]

18.3. Background

Elliott, A (2013) Prevalence of pain in older adults. In: P Schofield (ed) *The management of pain in older adults*. *Age & Ageing* 42 1.

Merskey, H., Bogduk, N (eds) (1994) *Classification of chronic pain: Descriptions of chronic pain syndromes and definition of pain terms*. 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]

Royal College of Physicians, British Geriatrics Society and British Pain Society (2007) *The assessment of pain in older people: national guidelines. Concise guidance to good practice series, No 8.* London, RCP Available from: http://britishpainsociety.org/book_pain_older_people.pdf [Accessed 20.7.14]

Royal College of Surgeons, Faculty of Anaesthetists (1990) *Report of the Working Party on Pain after surgery.* London, RCSENG - Professional Standards and Regulation.

18.4. Prevalence of pain in older people

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 1.07.14]

Dionne, C.E., Dunn, K.M., Croft, P.R (2006) Does back pain prevalence really decrease with increasing age? A systematic review. *Age & Ageing* 35 (3) 229-234. Epub 2006 Mar 17.

Hadjistavropoulos, T (2007) Pain in older persons. *Pain Research Management* 12 (3) 176.

18.5. Communication

Bagnara, L., Colombo, E., Bilotta, C., Vergani, C., Bergamaschini, I (2009) Il dolore cronico nel paziente anziano (Persistent pain in the elderly). *G Gerontol* 57 262-266.

Belin, C., Gatt, M.T (2006) Douleur et démence (Pain and Dementia). *Psychol Neuropsychiatr Vieil* 4(4) 247-254.

Blomqvist, K (2003) Older people in persistent pain: nursing and paramedical staff perceptions and pain management. *Journal of Advanced Nursing* 41(6) 575-584.

Blomqvist, K., Hallberg, I (2001) Recognising pain in older adults living in sheltered accommodation: the views of nurses and older adults. *International Journal of Nursing Studies* 38(3) 305-318.

Boorsma, M., Frijters, D. H. M., Knol, D. L., Ribbe M.E., Nijpels, G (2011) Effects of multidisciplinary integrated care on quality of care in residential care facilities for elderly people: a cluster randomized trial. *Canadian Medical Association Journal* 183(11) E724-732

Carnes, D., Underwood, M (2008) The importance of monitoring patient's ability to achieve functional tasks in those with musculoskeletal pain. *International Journal of Osteopathic Medicine* 11 26-32.

Carr, E.C.J (1997) Evaluating the use of a pain assessment tool and care plan: a pilot study. *Journal of Advanced Nursing* 26(6) 1073-1079.

Cohen-Mansfield. J., Lipson, S (2008) The utility of pain assessment for analgesic use in persons with dementia. *Pain* 134(1-2) 16-23.

De Rond, M. E. J., Van Dam, F., Muller, M (2000) A pain monitoring program for nurses: Effects on communication, assessment and documentation of patient's pain. *Journal of Pain and Symptom Management* 20(6) 424-439.

Hadjistavropoulos, T., Craig, D. K., Duck, S., Cano, A., Goubert, L., Jackson P.L., Mogil, J.S., Rainville, P., Sullivan, M. J.L., Williams, A., Vervoort, T. & Fitzgerald, T.D (2011) A biopsychosocial formulation of pain communication. *Psychological Bulletin* 13(6) 910-939

Haskard-Zolnierik, K (2012) Communication about patient pain in primary care: Development of the Physician-patient Communication About Pain scale (PCAP). *Patient Education & Counselling* 86(1) 33-40

Jackson, D., Horn.S., Kersten, P., et al. (2006) Development of a pictorial scale of pain intensity for patients with communication impairments: initial validation in a general population. *Clinical Medicine* 6(6) 580-585

Jorge, J., Dillon McDonald, D (2011) Hispanic older adults osteoarthritis pain communication. *Pain Management Nursing* 12(3) 173-179.

Machado, A.C., Bretas C. A (2006) Comunicacao nao-verbal de idosos frente ao processo de dor (Nonverbal communication of elderly patients facing the pain process). *Rev Bras Enferm* 59(2) 129-33.

McDonald, D., Shea, M., Fedo, J et al. (2008) Older adult pain communication and the brief pain inventory short form. *Pain Management Nursing* 9(4) 154-159.

McDonald, D., Fedo, J., (2009) Older adults pain communication: The effect of interruption. *Pain Management Nursing* 10(3) 149-153.

McDonald, D., Shea, M., Rose, L., et al. (2009) The effect of pain question phrasing on older adult pain information. *Journal of Pain and Symptom Management* 37(6) 1050-1060.

Morello, R., Alain, J., Alix, M., et al. (2007) A scale to measure pain in non-verbally communicating older patients: The EPCA-2 study of its psychometric properties. *Pain* 15(133) 87-98.

18.6. Interpersonal interaction in pain assessment

Allen, R., Haley, W., Small, B. & McMillan, S (2002) Pain reports by older hospice cancer patients and family caregivers: The role of cognitive functioning. *Gerontologist* 42(4) 507-514.

Blomqvist, K., Hallberg, I.R (2002) Managing pain in older persons who receive home-help for their daily living. Perceptions by older persons and care providers. *Scandinavian Journal of Caring Sciences* 16(3) 319-328.

Bradford, A., Shresthna, S., Snow, L., Stanley, M.A., Wilson, N., Hersch, G. & Kun, M.E (2012) Managing pain to prevent aggression in people with dementia: A non-pharmacologic Intervention. *American Journal of Alzheimer's Disease and Other Dementias* 27(1) 41-47.

Buffum, M., Haberfelde, M (2007) Moving to new settings: Pilot study of families' perceptions of professional caregivers' pain management in persons with dementia. *Journal of Rehabilitation Research and Development* 44(2) 295-304.

Cheung, G., Choi, P (2008) The use of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) by caregivers in dementia care facilities. *Journal of the New Zealand Medical Association* 121(1286) 21-29.

Couilliot, M.F., Darees, V., Delahaye, G., Ercolano, P., Carcaille, M., Vytopilova, P., Tenenbaum, B. & Vicaut, E (2012) Acceptability of an acupuncture intervention for geriatric chronic pain: an open pilot study. *Journal of Integrative Medicine* 11(1) 26-31.

Ferrell, B., Ferrell, B., Ahn, C., Tran, K (1994) Pain management for elderly patients with cancer at home. *Cancer* 74(7 Suppl) 2139-146.

Fuchs-Lacelle, S., Hadjistavropoulos, T (2004) Development and preliminary validation of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC). *Pain Management Nursing* 5(1) 37-49.

Ghafoor, V (2003) Management of painful conditions in the elderly. *Journal of Pharmacy Practice* 16(4) 249-260.

Hall-Lord, M., Johansson, I., Schmidt, I., Larsson, B. W (2002) Family members' perceptions of pain and distress related to analgesics and psychotropic drugs, and quality of care of elderly nursing home residents. *Health and Social Care in the Community* 11(3) 1365-2524.

van Herk, R., van Dijk, R., Biemold, N., Tibboel, D., Baar, F., de Wit, R (2009) Assessment of pain: can caregivers or relatives rate pain in nursing home residents? *Journal of Clinical Nursing* 18(17) 2478-2485.

Horgas, A., Dunn, K (2001) 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. *Journal of Gerontological Nursing* 27(3) 44-53.

Johnson, P., Nay, R., Gibson, S (2011) Assessing pain in non-verbal older people with cognitive impairment. *Anaesthesia and Intensive Care* 39(4) [ASA Abstract]

Martin, R., Williams, J., Hadjistavropoulos, T., Hadjistavropoulos, H., MacLean, M (2005) A qualitative investigation of seniors' and caregivers' views on pain assessment and management. *Canadian Journal of Nursing Research* 37(2) 142-165

Mentes, J., Teer, J., Cadogan, M (2004) The pain experience of cognitively impaired nursing home residents: Perceptions of family members and certified nursing assistants. *Pain Management Nursing* 5(3) 118-125.

Papadopoulos, A., Wright, S., Ensor, J (1999) Evaluation and attributional analysis of an aromatherapy service for older adults with physical health problems and carers using the service. *Complimentary Therapy Medicine* 7(4) 239-244.

Shega, J., Hougham, G., Stocking, C., Cox-Hayley, B., Sachs, G (2006) Management of noncancer pain in community-dwelling persons with dementia. *American Geriatrics Society* 54(12) 1892-1897.

18.7. Self -report measures of pain assessment

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]

Caraceni, A., Cherny, N et al. (2002) Pain measurement tools and methods in clinical research in palliative care: Recommendations of an expert working group of the European Association of Palliative Care. *Journal of Pain and Symptom Management* 23(3) 239-255.

Chatelle, C., Vanhauzenhuysse, A et al. (2008) Pain assessment in non-communicative patients. *Revue medicale de Liege* 63(5-6) 429-437.

Chibnall, J., Tait, R.C (2001) Pain assessment in cognitively impaired and unimpaired older adults: a comparison of four scales. *Pain* 92(1-2) 173-186.

Closs, S. J., Barr, B et al. (2004) A comparison of five pain assessment scales for nursing home residents with varying degrees of cognitive impairment. *Journal of Pain and Symptom Management* 27(3) 196-205.

Closs, S.J., 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).

Coyn, P.J., McCaffery, M et al. (2011) *Pain assessment in the patient unable to self-report* Available from: http://www.aspmn.org/organization/documents/UPDATED_NonverbalRevisionFinalWEB.pdf [Accessed 11.09.2017]

Davies, E., Male, M et al. (2004) Pain assessment and cognitive impairment: part 2. *Nursing Standard* 19(13) 33-40.

De Andrade, D. C., Jde Faria, W. V et al. (2010) The assessment and management of pain in the demented and non-demented elderly patient. *Arquivos de Neuro-Psiquiatria* 69(2-B) 387-394.

De Waters, T., Faut-Callahan, M et al. (2008) Comparison of self-reported pain and the PAINAD scale in hospitalized cognitively impaired and intact older adults after hip fracture surgery. *Orthopaedic Nursing* 27(1) 21-28.

Fisher, S. E., Burgio, L. D et al. (2002) 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. *Journal of the American Geriatrics Society* 50(1) 152-156.

Fisher, S. E., Burgio, L. D et al. (2006) Obtaining self-report data from cognitively impaired elders: Methodological issues and clinical implications for nursing home pain assessment. *Gerontologist* 46(1) 81-88.

Gagliese L., Melzack R (2000) Age differences in nociception and pain behaviours in the rat. *Neuroscience & Biobehavioral Reviews* 24 843-854.

Gregory, J (2011) *Identifying a Pain Assessment Tool for Patients with Cognitive Impairment in Acute Care*. London, Foundation of Nursing Studies

van Herk, R., van Dijk, M et al. (2009) Assessment of pain: Can caregivers or relatives rate pain in nursing home residents? *Journal of Clinical Nursing* 18(17) 2478-2485.

Herr, K (2010) Pain in the older adult: An imperative across all health care settings. *Pain Management Nursing* 11(2, Suppl 1) S1-S10.

Herr, K (2011) Pain assessment strategies in older patients. *Journal of Pain* 12 (Suppl 3): S3-S13.

Herr, K., Coyne, P. J et al. (2011) Pain assessment in the patient unable to self-report: Position statement with clinical practice recommendations. *Pain Management Nursing* 12(4): 230-250.

Horgas, A., Miller, L (2008) Pain assessment in people with dementia. *The American Journal of Nursing* 108(7) 62-70.

Horgas, A. L., Elliott, A. F et al. (2009) Pain assessment in persons with dementia: Relationship between self-report and behavioural observation. *Journal of the American Geriatrics Society* 57(1) 126-132.

Horgas, A. L., Nichols, A. L et al. (2007) Assessing pain in persons with dementia: Relationships among the non-communicative patient's pain assessment instrument, self-report, and behavioral observations. *Pain Management Nursing* 8(2) 77-85.

Hutchison, R. W., Tucker, Jr et al. (2006) Evaluation of a behavioral assessment tool for the individual unable to self-report pain. *American Journal of Hospice and Palliative Medicine* 23(4) 328-331.

Jensen, M.P., Karoly, P (1992) Self-report scales and procedures for assessing pain in adults. In: Turk, D.C., Melzack, R (eds). *Handbook of pain assessment*. New York, Guilford 135-151.

Jensen, M.P., Karoly, P., Braver, S (1986) The measurement of clinical pain intensity: a comparison of six methods. *Pain* 27 117-126.

Jensen, M.P., McFarland, C.A (1993) Increasing the reliability and validity of pain intensity measurement in chronic pain patients. *Pain* 55 195-203

Jensen-Dahm, C., Vogel, A et al. (2012) Discrepancy between self- and proxy-rated pain in Alzheimer's disease: results from the Danish Alzheimer Intervention Study. *Journal of the American Geriatrics Society* 60(7) 1274-1278.

Jowers Taylor, L., Herr, K (2003) Pain intensity assessment: A comparison of selected pain intensity scales for use in cognitively intact and cognitively impaired African American older adults. *Pain Management Nursing* 4(2) 87-95.

Kaasalainen, S., Crook, J (2003) An exploration of seniors' ability to report pain. *Clinical Nursing Research* 13(3) 199-215.

Kamel, H. K., Phlavan, M et al. (2001) Utilizing pain assessment scales increases the frequency of diagnosing pain among elderly nursing home residents. *Journal of Pain and Symptom Management* 21(6) 4505.

Keane, R. A., Williams, C et al. (2010) Pain assessment in specialist services for older people a national perspective. *Journal of the American Geriatric Society* 58(8) 1614-1615.

Leong, I. Y., Chong, M. S et al. (2006) 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 and Ageing* 35(3) 252-256.

Manfredi, P. L., Breuer, B et al. (2003) Pain assessment in elderly patients with severe dementia. *Journal of Pain and Symptom Management* 25(1) 48-52.

Manz, B. D., Mosier, R et al. (2000) Pain assessment in the cognitively impaired and unimpaired elderly. *Annual Midwest Nursing Research Society Conference, 22nd, Mar, 1998, Columbus, OH, US* 1(4) 106-115.

McAuliffe, L., Nay, R et al. (2008) Pain assessment in older people with dementia: literature review *Journal of Advanced Nursing* 65(1) 2-10.

Ni Thuathail, A., Welford, C (2011) Pain assessment tools for older people with cognitive impairment. *Nursing Standard* 26(6) 39-46.

Pautex, S., Herrmann, F et al. (2005) 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 *Journal of Gerontology* 60A(4) 524-529.

Pautex, S., Herrmann, F et al. (2007) Psychometric properties of the Doloplus-2 observational pain assessment scale and comparison to self-assessment in hospitalized elderly. *The Clinical Journal of Pain* 23(9) 774-779.

Pautex, S., Michon, A et al. (2006) Pain in severe dementia: Self-assessment or observational scales? *Journal of the American Geriatrics Society* 54(7) 1040-1045.

Phillips, S. E (2007) Pain assessment in the elderly. *US Pharmacist* 32(5) 37-52.

Rodriguez, C. S (2001) Pain measurement in the elderly: A review. *Pain Management Nursing* 2(2) 38-46.

Scherder, E., Bouma, A (2000) Visual analogue scales for pain assessment. Alzheimer's disease. *Gerontology* 46(1) 47-53.

Scherder, E., Bouma, A et al. (1999) Alzheimer patients report less pain intensity and pain affect than non-demented elderly. *Psychiatry: Interpersonal and Biological Processes S2- Psychiatry: Journal for the Study of Interpersonal Processes* 62(3) 265-272.

Scherder, E., Slaets, J et al. (2003) Pain assessment in patients with possible vascular dementia. *Psychiatry: Interpersonal and Biological Processes S2- Psychiatry: Journal for the Study of Interpersonal Processes* 66(2) 133-145.

Soscia, J (2003) Assessing pain in cognitively impaired older adults with cancer. *Clinical Journal of Oncology Nursing* 7(2) 174-177.

Stolee, P., Hillier, LM et al. (2005) Instruments for the assessment of pain in older persons with cognitive impairment. Biennial Convention, *Sigma Theta Tau International Honor Society of Nursing*, 37th, Nov, 2003, Toronto, ON, Canada 53(2) 319-326.

Streffer, M. L., Buchi, S et al. (2009) PRISM (pictorial representation of illness and self-measure): a novel visual instrument to assess pain and suffering in orofacial pain patients. *Journal of Orofacial Pain* 23(2) 140-146.

Tsai, P. F., Richards K (2006) Using an osteoarthritis-specific pain measure in elders with cognitive impairment: a pilot study *Journal of Nursing Management* 14(2) 90-95.

Weiner, D., Pieper, C et al. (1996) Pain measurement in elders with chronic low back pain: traditional and alternative approaches. *Pain* 67(2-3) 461-467.

Wheeler, M. S (2006) Pain assessment and management in the patient with mild to moderate cognitive impairment. *Home Healthcare Nurse* 24(6) 354-359.

While, C., Jocelyn A (2009) Observational pain assessment scales for people with dementia: a review. *British Journal of Community Nursing* 14(10) 438-442.

Wynne, C. F., Ling, S. M et al. (2000) Comparison of pain assessment instruments in cognitively intact and cognitively impaired nursing home residents. *Geriatric Nursing (New York, N.Y.)* 21(1) 20-23.

Zwahlen, S. M., Hamers, J. P et al. (2006) The psychometric quality and clinical usefulness of three pain assessment tools for elderly people with dementia. *Pain* 126(1-3) 210-220.

Zwakhalen, S. M., Hamers, J. P et al. (2006) Improving the clinical usefulness of a behavioural pain scale for older people with dementia. *Journal of Advanced Nursing* 58(5) 493-502.

DRAFT FOR CONSULTATION

18.8. Clinical assessment

Blomqvist K., Hallberg, I (1999) Pain in older adults in sheltered accommodation between assessment by older adults and staff. *Journal of Clinical Nursing* 8(2) 150-169.

Brown, D (2004) A literature review exploring how healthcare professionals contribute to the assessment and control of post-operative pain in older people. *Journal of Clinical Nursing* 13(6b) 74-90.

Cadogan, M., Schnelle, J., Al-Sammarrai, N., Yamamoto-Mitani, N., Cabrera, G., Osterweil, D (2005) A standardized quality assessment system to evaluate pain detection and management in the nursing home. *Journal of the American Medical Directors Association*, March Supplement S11-S19.

Clark, L., Fink, R., Pennington, K., Jones, K. (2006) Nurses' reflections on pain management in a nursing home setting. *Pain Management Nursing* 7(2) 71-77.

Cohen-Mansfield, J (2005) Nursing staff members' assessment of pain in cognitively impaired nursing home residents. *Pain Management Nursing* 6(2) 68-75.

Gregory, J., Haigh, C (2007) Multi-disciplinary interpretation of pain in older patients on medical units. *Nurse Education in Practice* 8(4) 249-257.

Jones, K., Fink, R., Hutt, E., Vojir, C., Pepper, G., Scott-Cawiezell, J., Mellis, B (2005) Measuring pain intensity in nursing home residents. *Journal of Pain and Symptom Management* 30(6) 519-527.

Kaasalainene, S., DiCenso, A., Donald, F, Staples, E (2007) Optimizing the role of the nurse practitioner to improve pain management in long-term care. *Western Journal of Nursing Research* 29(5) 561-580.

Kaasalainen, S., Coker, E., Dolovich, L., Papaioannou, A., Hadjistavropoulos, T., Emili, A., Ploeg, J (2007) Pain management decision making among long-term care physicians and nurses. *Canadian Journal of Nursing Research* 39(2) 14-31.

Layman Young, J., Horton, F., Davidhizar, R. (2006) Nursing attitudes and beliefs in pain assessment and management. *Journal of Advanced Nursing* 53(4) 412-421.

Liu, J., Pang, P., Lo, K (2012) Development and implementation of an observational pain assessment protocol in a nursing home. *Journal of Clinical Nursing* 21(11-12) 1789-1793.

Mrozek, J., Steble Werner, J (2001) Nurses attitudes towards pain, pain assessment and pain management practices in long term care facilities. *Pain Management Nursing* 2(4) 154-162.

Weiner, K., Rudy, T (2002) Attitudinal barriers to effective treatment of persistent pain in nursing home residents. *Journal of American Geriatrics Society* 50 (12) 2035-2040.

Yun-Fang ,T., Hsiu-Hsin, T., Yeur-Hur L (2004) Pain prevalence, experience and management strategies among the elderly in Taiwanese nursing homes. *Journal of Pain and Symptom Management* 28 (6) 579-584.

Yi-Heng C, Li-Chan, L., Watson, R (2010) Validating nurses' and nursing assistants' report of assessing pain in older people with dementia. *Journal of Clinical Nursing* 19(1-2) 42-52.

Zwakhlen, S., Hamers J, Peijnenburg, M (2007) Nursing staff knowledge and beliefs about pain in elderly nursing home residents with dementia. *Pain Research and Management* 12(3) 177–184.

18.9. Self-report measures of physical function

Hadjistavropoulos, T., Herr, K., Turk, D et al (2007) An interdisciplinary expert consensus statement on assessment of pain in older persons. *Clinical Journal of Pain* 23:S1-S43.

Menz, H. B., Tiedemann, A., Kwan, M. M., Plumb, K., Lord, S. R (2006) Foot pain in community-dwelling older people: an evaluation of the Manchester Foot Pain and Disability Index. *Rheumatology* 45(7) 863-867

Ong, B. N., Hooper, H., Jinks, C., Dunn, K., Croft, P. J (2006) 'I suppose that depends on how I was feeling at the time': perspectives on questionnaires measuring quality of life and musculoskeletal pain. *Health Service Research Policy* 1(2) 81-88.

Roddy, E., Muller, S., Thomas, E (2009) Defining disabling foot pain in older adults: further examination of the Manchester Foot Pain and Disability Index. *Rheumatology* 48(8) 992-996.

Ustun, T. B., Chatterji, S., Kostanjsek, N., Rehm, J., Kennedy, C., Epping-Jordan, J., Saxena, S., von Korff, M (2010) Developing the World Health Organisation Disability Assessment Schedule 2.0. *Bulletin World Health Organization* 88 815-823. Available from <http://www.who.int/bulletin/volumes/88/11/09-067231/en/> [Accessed 11.09.2017]

Wand, B. M., Chiffelle, L. A., O'Connell, N. E., McAuley, J. H., DeSouza, L. H (2010) Self-reported assessment of disability and performance-based assessment of disability are influenced by different patient characteristics in acute low back pain. *European Spine Journal* 19(4) 633-640.

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.

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

* Indicates inclusion of paper with sample age <65years, which is below criteria age. However, sample extends into older ages and paper is of particular interest to overall review.

Adams, J., Cheng, P., Deonarain, L., Frank, C., Mayers, A., Smith, B. J., Yuen, H (2012) Extinction of care-induced vocalizations by a desensitization routine on a palliative care unit. *American Journal of Hospice and Palliative Medicine* 29(4) 318-320.

Agüera-Ortiz, L., Failde, I., Cervilla, J. A., Mico, J. A (2013) Unexplained pain complaints and depression in older people in primary care. *Journal of Nutrition, Health & Ageing* 17(6) 574-577.

Andersson, G (2012) Chronic pain in older adults: A controlled pilot trial of a brief cognitive-behavioural group treatment. *Behavioural and Cognitive Psychotherapy* 40(2) 239-244.

* Baker, T. A., Buchanan, N. T., Small, B.J., Hines, R. D. & Whitfield, K. E (2011) Identifying the relationship between chronic pain, depression and life satisfaction in older African Americans. *Gerontology* 33(4) 426-443.

*van Baarsen, B (2009) Suffering, loneliness, and the euthanasia choice: an explorative study. *Journal of Social Work in End-of-Life & Palliative Care* 4(3) 189-213.

Bergh, I., Steen, G., Waern, M., Johansson, B., Odén, A., Sjöström, B., Steen, B (2003) Pain and its relation to cognitive function and depressive symptoms: A Swedish population study of 70-year-old men and women. *Journal of Pain & Symptom Management* 26(4) 903-912.

Bunting-Perry, L (2010) Pain in Parkinson's disease: Characteristics and responses in ambulatory care patients. *Dissertation Thesis – University of Pennsylvania*.

Carrington Reid, M., Williams, C. S., Concato, J., Tinetti, M. E., Gill, T. M (2003) Depressive symptoms as a risk factor for disabling back pain in community-dwelling older persons *Journal of American Geriatrics Society* 51(12) 1710-1717.

Catananti, C., Gambassi, G (2010) Pain assessment in the elderly. *Surgical Oncology* 19 140-148.

Chan, W. C. H., Kwan, C. W., Chi, I., & Chong, A. M. L. (2014). The impact of loneliness on the relationship between depression and pain of Hong Kong Chinese terminally ill patients. *Journal of palliative medicine*, 17(5), 527-532.

Chan, W. C. H., Kwan, C. W., & Chi, I. (2015). Moderating effect of communication difficulty on the relationship between depression and pain: a study on community-dwelling older adults in Hong Kong. *Ageing & mental health*, 19(9), 829-834.

Craft, L., Prahlow, J. A (2011) From fecal impaction to colon perforation. *American Journal of Nursing* 111(8) 38-43.

Docking, R. E., Fleming, J., Brayne, C., Zhao, J., Macfarlane, G. J., Jones, G. T (2011) Epidemiology of back pain in older adults: Prevalence and risk factors for back pain onset. *Rheumatology* 50(9) 1645-1653.

Hairi, N. N., Cumming, R. G., Blyth, F. M., Naganathan, V (2013) Chronic pain, impact of pain and pain severity with physical disability in older people – Is there a gender difference? *Maturitas* 74(1) 68-73.

*Hart-Johnson, T. A., Green, C. R (2010) Physical and psychosocial health in older women with chronic pain: comparing clusters of clinical and nonclinical samples. *Pain Medicine* 11(4) 564-574.

Hartvigsen, J., Christensen, K (2008) Pain in the back and neck are with us until the end: a nationwide interview-based survey of Danish 100-year-olds. *Spine* 33(8) 909-913.

Hong, E. P., Margaret, O., Leng, C. Y., Kannuasamy, P (2012) The lived experience of older Chinese Singaporeans with life-threatening illnesses in an inpatient hospice. *Progress in Palliative Care* 20(1) 19-27.

Hoover, D.R., Siegel, M., Lucas, J., Kalay, E., Gaboda, D., Devanand, D. P (2010) Depression in the first year of stay for elderly long-term residents in the USA. *International Psychogeriatrics* 22(7) 1161-1171.

Huang, Y., Carpenter, I (2011) Identifying elderly depression using the Depression Rating Scale as part of comprehensive standardised care assessment in nursing homes. *Ageing Mental Health* 15(8) 1045-1051.

Jacobs, J. M., Hsmmerman-Rozenberg, R., Cohen, A., Stessman, J (2006) Chronic back pain among the elderly: Prevalence, associations and predictors. *Spine* 31(7) 203-207.

Lavin, R., Park, J (2011) Depressive symptoms in community-dwelling older adults receiving opioid therapy for chronic pain. *Journal of Opioid Management* 7(4) 309-319.

*McNamara, P., Stavitsky, K., Harris, E., Szent-Imrey, O., Durso, R (2010) Mood, side of motor symptom onset and pain complaints in Parkinson's disease. *International Journal of Geriatric Psychiatry* 25(2) 519-524.

Mueller, C.A., Lielke, R. K., Penner, E., Junius-Walker, U., Hummers-Pradier, E., Theile, G (2010) Disclosure of new health problems and intervention planning using a geriatric assessment in a primary care setting. *Family Medicine* 51(6) 93-500.

Mystakidou, K., Parpa, E., Tsilika, E., Panagiotou, I., Zygogianni, A., Giannikaki, E., Gouliamos, A (2013) Geriatric depression in advanced cancer patients: The effect of cognitive and physical functioning. *Geriatric Gerontology International* 13(2) 281-288.

*Sun, X., Lucas, H., Meng, Q., Zhang, Y (2011) Associations between living arrangements and health-related quality of life of urban elderly people: A study from China. *Quality of Life Research* 20 59-369.

Thomas E, Mottram S, Peat G, Wilkie R, Croft P (2007) 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* 129 21-27

Tsatali, M., Gouva, M (2011) The impact of pain anxiety on chronic pain among elders. *European Psychiatry* 26(1) 1006.

*Tse, M., Leung, R., Ho, S (2011) Pain and psychological well-being of older persons living in nursing homes: an exploratory study in planning and patient-centred intervention. *Journal of Advanced Nursing* 68(2) 312-321.

*Vanková, H., Holmerová, I., Andel, R., Veleta, P., Janecková, H (2008) Functional status and depressive symptoms among older adults from residential care facilities in the Czech Republic. *International Journal of Geriatric Psychiatry* 23(5) 466-471.

Weaver, G. D., Kuo, Y., Raji, M. A., Al Snih, S., Ray, L., Torres, E., Ottenbacher, K. J. (2009) Pain and disability in older Mexican-American adults. *Journal of American Geriatric Society* 57(6) 992-999.

*Wu, B., Chi, I., Plassman, B. L., Guo, M (2010) Depressive symptoms and health problems among Chinese immigrant elders in the US and Chinese elders in China. *Aging and Mental Health* 14(6) 695-704.

Wylde, V., Hewlett, S., Learmonth, I. D., Dieppe, P (2011) Persistent pain after joint replacement: Prevalence, sensory qualities and postoperative determinants. *Pain* 152(3) 566-572.

Zarit, S.H., Griffiths, P. C., Berg, S (2004) Pain perceptions of the oldest old: A longitudinal study. *Gerontologist* 44(4) 459-468.

18.11. Pain assessment in cognitive impairment

Brown, C (2010) Pain in communication impaired residents with dementia: Analysis of Resident Assessment Instrument (RAI) data. *Dementia* 9(3) 375-389.

Bruce J (2017) Initial testing of a behavioural pain assessment tool within trauma units. *International Journal of Orthopaedic and Trauma Nursing*. (24) 3-11

Chang, S. O., Younjae, O. H., Park, E. O., Geun Myun Kim, G. M., Kil, S. Y (2011) Concept analysis of nurses' identification of pain in demented patients in a nursing home: Development of a hybrid model. *Pain Management Nursing* 12(2) 61-69.

Cheung, G., Choi, P (2008) The use of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) by caregivers in dementia care facilities. *New Zealand Medical Journal* 28, 121(1286) 21-29.

Cohen-Mansfield, J (2006) Pain Assessment in Non-communicative Elderly persons – PAINE. *Clinical Journal of Pain* 22(6) 569-575.

Curtiss, C (2010) Challenges in pain assessment in cognitively intact and cognitively impaired older adults with cancer. *Oncology Nursing Forum* 37(5) S7-16.

Delac, K (2002) Pain assessment in patients with cognitive impairment is possible. *Topics in Emergency Medicine* 24(1) 52-54.

De Waters, T (2003) An evaluation of clinical tools to measure pain in older people with cognitive impairment. *British Journal of Community Nursing* 8(5) 226-234.

De Waters, T., Faut-Callahan, M., McCann, J et al. (2008) Comparison of self-reported pain and the PAINAD scale in cognitively impaired and intact older adults after hip fracture surgery. *Orthopaedic Surgery* 27(1) 21-28.

DeWaters, T., Faut-Callahan, M., McCann, J. J., Paice, J. A., Fogg, L., Hollinger-Smith, L., et al. (2008). Comparison of self-reported pain and the PAINAD scale in hospitalized cognitively impaired and intact older adults after hip fracture surgery. *Orthopaedic Nursing / National Association of Orthopaedic Nurses*, 27(1), 21-28.

Epperson, M., Bonnell, W (2004) Pain assessment in dementia: Tools and strategies. *Clinical excellence for nurse Practitioners* 8(4) 166-171.

Ersek, M., Herr, K., Neradilek, M et al (2010) Comparing the psychometric properties of nonverbal pain behaviours (CNPI) and the pain assessment in advanced dementia (PAIDAD) instruments. *Pain Medicine* 11(3) 395-404.

Feldt, K (1998) Examining pain in aggressive cognitively impaired older adults. *Journal of Gerontological Nursing* 24(11) 14-22.

Feldt, K (2004) The complexity of managing pain for frail elders. *Journal of the American Geriatric Society* 52(5) 840-841.

Gnass, I., Nestler, N., Osterbrink, J (2012) *Pitfalls of pain management in nursing homes*. Poster presented at 6th World Congress, World Institute of Pain, Miami, USA.

Herr, K (2010) Pain in the older adult: An imperative across all health care settings. *Pain Management Nursing* 11(2) S1-S10.

Herr, K., Garand, L (2001) Assessment and measurement of pain in older adults. *Clinics in Geriatric Medicine* 17(3) 457-458.

Herr, K., Bjoro, K., Decker, S (2006) Tools for assessment of pain in non-verbal older adults with dementia: A state of the science review. *Journal of Pain & Symptom Management* 31(2) 170-192.

Herr, K., Bursch, H., Ersek, M., Miller, L., Swafford, K (2010) Use of pain-behavioral assessment tools in the nursing home expert consensus recommendations for practice. *Journal of Gerontological Nursing* 36(3) 18-29.

Hølen, J. C., Saltvedt, I., Fayers, P. M et al. (2007) Doloplus-2, a valid tool for behavioural pain assessment? *BMC Geriatrics* 19(7) 29.

Horgas, A., Miller, L (2008) Pain assessment in people with dementia. *American Journal of Nursing* 108 (7) 62-70.

Hsu, K.T., Shuman, S.K et al. (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]

Husebo, B., Strand, L., Nilssen, R et al. (2007) Mobilization-Observation-Behavior-Intensity Dementia pain scale (MOBID): Development and validation of a nurse-administered pain assessment tool for use in dementia. *Journal of Pain and Symptom Management* 34(1) 67-80.

Hutchison, R., Tucker, Jr., Kim, W et al. (2006) Evaluation of a behavioral assessment tool for the individual unable to self-report pain. *American Journal of Hospice & Palliative Medicine* 23(4) 328-331.

Jordan, A., Hughes, J., Pakresi, M., et al (2009) The utility of PAINAD in assessing pain in a UK population with severe dementia. *International Journal of Geriatric Psychiatry* 26(2) 118-126.

Jordan, A., Regnard, C., O'Brien, J. T., Hughes, J. T (2012) Pain and distress in advanced dementia: Choosing the right tools for the job. *Palliative Medicine* 26(7) 873-878.

Kaasalainen, S., Crook, J (2004) An exploration of seniors' ability to report pain. *Clinical Nursing Research* 13(3) 199-215.

Keane, R. A., Williams, C., O'Neill, D (2010) Pain assessment in specialist services for older people: A national perspective. *Journal of the American Geriatric Society* 58(8) 1614-1615.

Kunz, M., Scharmann, S., Hemmeter, U., Schepelmann, K., Lautenbacher, S (2007) The facial expression of pain in patients with dementia. *Pain* 133(1-3) 221-228.

Lane, P., Kuntupis, M., MacDonald, S et al. (2003) A pain assessment tool for people with advanced Alzheimers and other dementias. *Home Healthcare Nurse* 21(1) 32-37.

Lints-Martindale, A., Hadjistavropoulos, T., Lix, L., Thorpe, L (2011) A comparative investigation of observational pain assessment tools for older adults with dementia. *Clinical Journal of Pain* 28(3) 226-237.

Lucas, A., Schular, M., Fischer, T. W et al (2012) Pain and dementia. A diagnostic challenge. *Gerontology & Geriatrics* 45(1) 45-49.

Mahoney, A., Peters, L (2008) The Mahoney Pain Scale: Examining pain and agitation in advanced dementia. *American Journal of Alzheimer's Disease & Other Dementias* 23(3) 250-261.

Manias, E., Gibson, S., Finch, S (2011) Testing an educational nursing intervention for pain assessment and management in older people. *Pain Medicine* 12(8) 1199-1215.

Manz, B., Mosier, R., Nusser-Gerlach, M. A et al. (2000) Pain assessment in the cognitively impaired and unimpaired elderly. *Pain Management Nursing* 1(4) 106-115.

Mezinskis, P. N., Keller, A. W., Schmidt Luggen, A (2004) Assessment of pain in the cognitively impaired older adult in long-term care. *Geriatric Nursing* 25(2) 107-112.

Ni Thuathail, A., Welford, C (2011) Pain assessment tools for older people with cognitive impairment.

Nursing Standard 26(6) 39-46.

Pautex, S., Michon, A., Guedira, M et al. (2006) Pain in severe dementia: Self-assessment or observational scales? *Journal of the American Geriatric Society* 54(7) 1040-1045.

Pickering, G (2010) Reliability study in five languages of the translation of the pain behavioural scale Doloplus. *European Journal of Pain* 14(5) 545e1-10.

Rainfray, M., Brochet, B., de Sarasqueta, A (2003) Assessment of pain in elderly hospitalised patients a transversal descriptive survey. *Presse Med* 32(20) 924-929.

Schiepersa, P., Bert Bonroyb, C., Greet Leysens, A., Dragana Miljkovic, B et al (2010) On-site electronic observational assessment tool for discomfort and pain. *Computer Methods and Programs in Biomedicine* 99(1) 34-42.

Warden, V., Hurley. A. C., Volicer, L (2003) Development and psychometric evaluation of the Pain Assessment in Advanced Dementia (PAINAD) scale. *Journal of the American Medical Directors Association* 4(1) 9-15.

Zwakhlen, S., Hamers, J., Huijjer, H., Abu-Saad Martijn, P., Berger F (2006) Pain in elderly people with severe dementia: A systematic review of behavioural pain assessment tools. *BMC Geriatrics* 6(3) Available from <http://www.biomedcentral.com/content/pdf/1471-2318-6-3.pdf> [Accessed 11.09.2017]

Zwakhlen, S., van't Hof, C., Hamers, J. P (2012) Systematic pain assessment using an observational scale in nursing home residents with dementia: exploring feasibility and applied interventions. *Journal of Clinical Nursing* 21(21-22) 3009–3017.

18.12. Pain assessment guidelines for older adults

Allaz, A. F., Cedraschi, C., Rentsch, D., Canuto, A (2011) Chronic pain in elderly people: psychosocial dimension. *Revue Medicale Suisse* 7(301) 1470-1410.

American Geriatrics Society (1998) AGS Panel on Chronic Pain in Older Persons. The management of chronic pain in older persons. *Journal of the American Geriatrics Society* 46 635-651

American Geriatrics Society (2002) AGS Panel on Persistent Pain in Older Persons. The management of persistent pain in older persons. *Journal of the American Geriatrics Society* 50 S205-224.

American Geriatrics Society (2009) AGS Panel on the Pharmacological Management of Persistent Pain in Older Persons. Pharmacological management of persistent pain in older persons. *Journal of the American Geriatrics Society* 57(8) 1331-1346.

Australian Pain Society (2005) *Pain in Residential Aged Care Facilities: Management Strategies*. North Sydney, New South Wales, Australia.

Borlion, B., Lecart, M. P (2010) *Pijn en ouderen. Een praktische gids*. Lannoo Campus, Morlion.

British Geriatrics Society (2013) Guidance on the management of pain in older people. *Age and Ageing* 42 i1-i57.

Chou, R., Fanciullo, G. J., Fine, P. G., Adler, J. A., Ballantyne, J. C et al. (2009) Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *Journal of Pain* 10(2) 113-130.

Ducloux, D., Guisado, H., Pautex, S (2013) Promoting sleep for hospitalized patients with advanced cancer with relaxation therapy: experience of a randomized study. *American Journal of Hospice and Palliative Care* 30(6) 536-40.

Edith Cowan University (2007) *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. 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]

Hanlon, J. T., Aspinall, S. L., Semla, T. P., Weisbord, S. D., Fried, L. F., Good, C. B., Fine, M. J., Stone, R. A., Pugh, M. J., Rossi, M. I., Handler, S. M (2009) Consensus guidelines for oral dosing of primarily renally cleared medications in older adults. *Journal of the American Geriatrics Society* 57(2) 335-340.

Herr, K., Coyne, P.J., Key, T., Manworren, R., McCaffery, M., Merkel, S., Pelosi-Kelly, J., Wild, L (2006) Pain assessment in the nonverbal patient: Position statement with clinical practice recommendations. *Pain Management Nursing* 7(2) 44-52.

Pautex, S., Rexach-Cano, L., van den Noorgate, N., Cedraschi, C., Cruz-Jentoft, A. J (2013) Management of chronic pain in old patients: Belgium, Spain and Switzerland. *European Geriatric Medicine* 4(4) 281-287.

Royal College of Physicians, British Geriatrics Society and British Pain Society (2007) *The assessment of pain in older people: national guidelines*. Concise guidance to good practice series, No 8. London: Royal College of Physicians. Available from <http://www.rcplondon.ac.uk/sites/default/files/concise-assessment-of-pain-in-older-people-2007.pdf> [Accessed 11.04.2017]

Sociedad (2001) Española de Geriatria y Gerontología. *Dolor en el anciano Glosa Ediciones*, Barcelona.

Sociedad (2012) Española de Geriátría y Gerontología. Guía de buena práctica clínica en Geriátría. *Dolor crónico en el anciano* IMC, Madrid.

Turk D, Melzack R (1992) *Handbook on Pain Assessment*. New York, Guilford Press

18.13. Further Reading

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

DRAFT FOR CONSULTATION

19. Appendices

19.1. Appendix 1 - Search questions, strategies and results

This section details one example of a full search strategy. This process was repeated for all individual categories.

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

Questions addressed

1. How does mood impact on the experience of pain?
2. How does mood impact on the expression or reporting of pain?
3. When assessing pain, are there differential diagnoses to consider in relation to mood?

Definitions

To facilitate literature searching older adults were defined as people over the age of 65, however in instances where adults <65 years were included, the sample extended into older age and the paper was of particular interest and relevance to the overall review, these were included.

Search Strategy

Pain

AND

Affect OR Emotion OR Mood OR Psychological OR "Mental health" OR Distress OR Depression OR Anxiety OR Panic OR "Post-traumatic stress disorder" OR "Post traumatic stress disorder" OR PTSD

AND

Reporting OR Expressing OR Communication

AND

elder* OR "older adult" OR "older adults" OR geriatric OR "older people" OR retired

NOT

Specific database terms for all adults OR Specific database terms for adolescents/children

Limits:

Published 2002-2010

Databases searched:

PubMed, CINAHL, Amed, PsycINFO, Embase, & The Cochrane Library

Summary of results (2014 search) ¹

	Hits
Medline:	1386
CINAHL:	479
AMED:	87
PsycINFO:	525
EMBASE	3722
The Cochrane Library:	106
Combined total of all databases:	6305
Duplicates found (via RefWorks):	539
Final total:	5766

The literature search (Jan 1990- April 2017) identified 5850 papers, of which 547 were duplicates and 34 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.

Individual database results

1. Medline (via EBSCOhost)

#	Search terms	
20	#19 AND MH Humans	1310
19	#18 Date Limit: 2002-2010	2879
18	#17 NOT #12	3173
17	#3 AND #6 AND #16	726
16	TI "DSM*" OR TI "Diagnostic and Statistical Manual" OR AB "DSM*" OR AB "Diagnostic and Statistical Manual" OR MH "Diagnostic and Statistical Manual of Mental Disorders+"	45564
15	#14 AND MH Humans ²	72

¹ A repeat search was performed in April 2017 which identified 76 new papers found, eight of which were duplicates, 68 titles read, six papers read of which two were relevant and included in revised text and summary.

² Added as there was a large number of animal studies in the results of #14

13	#11 NOT #12	272
12	MH Adolescent OR MH Adult OR MH Middle Aged OR MH Young Adult OR MH "Child+" OR MH "Infant+"	12498092
11	#3 AND #6 AND #9 AND #10	1011
10	TI Reporting OR TI Expressing OR TI Communication OR AB Reporting OR AB Expressing OR AB Communication	368340
9	#7 OR #8	1073591
8	MH "Emotions+" OR MH Mental Health OR MH "Mental Disorders+" OR MH Depression OR MH Affective Symptoms	1046973
7	TI Affect OR TI Emotion OR TI Mood OR TI Psychological OR TI "Mental health" OR TI Distress OR TI Depression OR TI Anxiety OR TI Panic OR TI "Post-traumatic stress disorder" OR TI "Post traumatic stress disorder" OR TI PTSD OR AB Affect OR AB Emotion OR AB Mood OR AB Psychological OR AB "Mental health" OR AB Distress OR AB Depression OR AB Anxiety OR AB Panic OR AB "Post-traumatic stress disorder" OR AB "Post traumatic stress disorder" OR AB PTSD	1776430
6	#4 OR #5	2994060
5	MH "aged+" OR MH geriatrics	2209211
4	TI elder* OR TI "older adult" OR TI "older adults" OR TI geriatric OR TI "older people" OR TI retired OR AB elder* OR AB "older adult" OR AB "older adults" OR AB geriatric OR AB "older people" OR AB retired	3158962
3	#1 OR #2	510633
2	MH "pain+"	288798
1	TI pain OR AB pain	890679

2. CINAHL (via EBSCOhost)

#	Search terms	
20	#19 AND MH Humans	479
19	#18 Date Limit: 2002-2010	846
18	#17 NOT #12	1650
17	#3 AND #6 AND #16	6059
16	TI "DSM*" OR TI "Diagnostic and Statistical Manual" OR AB "DSM*" OR AB "Diagnostic and Statistical Manual" OR MH "Diagnostic and Statistical Manual of Mental Disorders+"	12392
14	#13 Date Limit: 2002 - 2010	14
13	#11 NOT #12	24
12	MH "Adolescence+" OR MH Adult OR MH Middle Age OR MH Young Adult OR MH "Child+" OR MH Minors (Legal)	80
11	#3 AND #6 AND #9 AND #10	1117454
10	TI Reporting OR TI Expressing OR TI Communication OR AB Reporting OR AB Expressing OR AB Communication	349
9	#7 OR #8	66352
8	MH "Emotions+" OR MH Mental Health OR MH "Mental Disorders+" OR MH "Affective Symptoms+"	456188

7	TI Affect OR TI Emotion OR TI Mood OR TI Psychological OR TI "Mental health" OR TI Distress OR TI Depression OR TI Anxiety OR TI Panic OR TI "Post-traumatic stress disorder" OR TI "Post traumatic stress disorder" OR TI PTSD OR AB Affect OR AB Emotion OR AB Mood OR AB Psychological OR AB "Mental health" OR AB Distress OR AB Depression OR AB Anxiety OR AB Panic OR AB "Post-traumatic stress disorder" OR AB "Post traumatic stress disorder" OR AB PTSD	820743
6	#4 OR #5	187771
5	MH "aged+" OR MH "geriatrics"	448625
4	TI elder* OR TI "older adult" OR TI "older adults" OR TI geriatric OR TI "older people" OR TI retired OR AB elder* OR AB "older adult" OR AB "older adults" OR AB geriatric OR AB "older people" OR AB retired	886472
3	#1 OR #2	86487
2	MH "pain+"	161271
1	TI Pain OR AB PAIN	279653

3. AMED (via EBSCOhost)

#	Search terms	
20	#19 AND MH Humans	87
19	#18 Date Limit: 2002-2010	87
18	#17 NOT #12	134
17	#3 AND #6 AND #16	158
16	TI "DSM*" OR TI "Diagnostic and Statistical Manual" OR AB "DSM*" OR AB "Diagnostic and Statistical Manual" OR MH "Diagnostic and Statistical Manual of Mental Disorders+"	377
14	#13 Date Limit: 2002 - 2010	0
13	#11 NOT #12	13
12	DE "Adult" OR DE "Adolescence" OR DE "Adolescent" OR DE "Middle Aged" OR DE "Child" OR DE "Infant"	47
11	#3 AND #6 AND #9 AND #10	13
10	TI Reporting OR TI Expressing OR TI Communication OR AB Reporting OR AB Expressing OR AB Communication	5641
9	#7 OR #8	20476
8	DE Affect OR DE Emotions OR DE Mental Health OR DE Depression OR DE Anxiety OR DE Panic	3743
7	TI Affect OR TI Emotion OR TI Mood OR TI Psychological OR TI "Mental health" OR TI Distress OR TI Depression OR TI Anxiety OR TI Panic OR TI "Post-traumatic stress disorder" OR TI "Post traumatic stress disorder" OR TI PTSD OR AB Affect OR AB Emotion OR AB Mood OR AB Psychological OR AB "Mental health" OR AB Distress OR AB Depression OR AB Anxiety OR AB Panic OR AB "Post-traumatic stress disorder" OR AB "Post traumatic stress disorder" OR AB PTSD	39838
6	#4 OR #5	8758
5	DE "aged" OR DE "geriatrics"	224
4	TI elder* OR TI "older adult" OR TI "older adults" OR TI geriatric OR TI "older people" OR TI retired OR AB elder* OR AB "older adult" OR AB "older adults" OR AB geriatric OR AB "older people" OR AB retired	17529
3	#1 OR #2	23352
2	DE "pain"	8886
1	TI Pain OR AB PAIN	45160

4. PsycINFO (via EBSCOhost)

#	Search terms	
20	#19 AND MH Humans	525

19	#17 Date Limit: 2002-2010	526
17	#3 AND #6 AND #16	1111
16	TI "DSM*" OR TI "Diagnostic and Statistical Manual" OR AB "DSM*" OR AB "Diagnostic and Statistical Manual" OR MH "Diagnostic and Statistical Manual of Mental Disorders+"	38720
11	#3 AND #6 AND #9 AND #10	1176
10	TI Reporting OR TI Expressing OR TI Communication OR AB Reporting OR AB Expressing OR AB Communication	147462
9	#7 OR #8	919573
8	DE "Mental Disorders" OR DE "Adjustment Disorders" OR DE "Affective Disorders" OR DE "Alexithymia" OR DE "Anxiety Disorders" OR DE "Autism" OR DE "Chronic Mental Illness" OR DE "Dementia" OR DE "Dissociative Disorders" OR DE "Eating Disorders" OR DE "Elective Mutism" OR DE "Factitious Disorders" OR DE "Gender Identity Disorder" OR DE "Hysteria" OR DE "Impulse Control Disorders" OR DE "Koro" OR DE "Mental Disorders due to General Medical Conditions" OR DE "Neurosis" OR DE "Paraphilias" OR DE "Personality Disorders" OR DE "Pervasive Developmental Disorders" OR DE "Pseudodementia" OR DE "Psychosis" OR DE "Schizoaffective Disorder" OR DE "Emotions" OR DE "Desire" OR DE "Emotional States" OR DE "Emotions" OR DE "Desire" OR DE "Emotional States" OR DE "Emotional States" OR DE "Affection" OR DE "Alienation" OR DE "Ambivalence" OR DE "Anger" OR DE "Anxiety" OR DE "Apathy" OR DE "Aversion" OR DE "Boredom" OR DE "Depression (Emotion)" OR DE "Disappointment" OR DE "Disgust" OR DE "Dissatisfaction" OR DE "Distress" OR DE "Doubt" OR DE "Embarrassment" OR DE "Emotional Trauma" OR DE "Enthusiasm" OR DE "Euphoria" OR DE "Fear" OR DE "Frustration" OR DE "Gratitude" OR DE "Grief" OR DE "Guilt" OR DE "Happiness" OR DE "Helplessness" OR DE "Homesickness" OR DE "Hope" OR DE "Hopelessness" OR DE "Jealousy" OR DE "Loneliness" OR DE "Love" OR DE "Mania" OR DE "Mental Confusion" OR DE "Optimism" OR DE "Pessimism" OR DE "Pleasure" OR DE "Pride" OR DE "Regret" OR DE "Restlessness" OR DE "Sadness" OR DE "Shame" OR DE "Suffering" OR DE "Suspicion" OR DE "Sympathy" OR DE "Hostility" OR DE "Computer Anxiety" OR DE "Mathematics Anxiety" OR DE "Performance Anxiety" OR DE "Social Anxiety" OR DE "Speech Anxiety" OR DE "Test Anxiety" OR DE "Hate" OR DE "Fear of Success" OR DE "Panic" OR DE "Learned Helplessness" OR DE "Hypomania"	1313620
7	TI Affect OR TI Emotion OR TI Mood OR TI Psychological OR TI "Mental health" OR TI Distress OR TI Depression OR TI Anxiety OR TI Panic OR TI "Post-traumatic stress disorder" OR TI "Post traumatic stress disorder" OR TI PTSD OR AB Affect OR AB Emotion OR AB Mood OR AB Psychological OR AB "Mental health" OR AB Distress OR AB Depression OR AB Anxiety OR AB Panic OR AB "Post-traumatic stress disorder" OR AB "Post traumatic stress disorder" OR AB PTSD	746489
6	#4 OR #5	82539
5	DE "geriatrics"	6469
4	TI elder* OR TI "older adult" OR TI "older adults" OR TI geriatric OR TI "older people" OR TI retired OR AB elder* OR AB "older adult" OR AB "older adults" OR AB geriatric OR AB "older people" OR AB retired	164397
3	#1 OR #2	61865
2	DE "pain"	17383
1	TI Pain OR AB PAIN	123194

5. EMBASE (via Ovid)

#	Search terms	
20	#19 AND MH Humans	3722
19	#18 Date Limit: 2002-2010	701
18	#17 NOT #12	62120
17	#3 AND #6 AND #16	30628
16	TI "DSM*" OR TI "Diagnostic and Statistical Manual" OR AB "DSM*" OR AB	51782

	"Diagnostic and Statistical Manual" OR MH "Diagnostic and Statistical Manual of Mental Disorders+"	
14	#12 NOT #13	8364
13	exp adolescent/ OR exp adult ³ / OR exp child/ OR exp middle aged/ OR exp newborn/	13172704
12	#3 AND #7 AND #10 AND #11	30064
11	Reporting.ti OR Expressing.ti OR Communication.ti OR Reporting.ab OR Expressing.ab OR Communication.ab	455207
10	#8 OR #9	2371481
9	exp emotion/ OR exp mental health/ OR exp mental disease/	1692020
8	Affect.ti OR Emotion.ti OR Mood.ti OR Psychological.ti OR "Mental health".ti OR Distress.ti OR Depression.ti OR Anxiety.ti OR Panic.ti OR "Post-traumatic stress disorder".ti OR "Post traumatic stress disorder".ti OR PTSD.ti OR Affect.ab OR Emotion.ab OR Mood.ab OR Psychological.ab OR "Mental health".ab OR Distress.ab OR Depression.ab OR Anxiety.ab OR Panic.ab OR "Post-traumatic stress disorder".ab OR "Post traumatic stress disorder".ab OR PTSD.ab	3549531
7	#4 OR #5 OR #6	2240016
6	exp elderly care/	63799
5	exp aged/	2145714
4	"older people".ti OR geriatric.ti OR elder*.ti OR "older adults".ti OR retired.ti OR "older people".ab OR geriatric.ab OR elder*.ab OR "older adults".ab OR retired.ab	2574137
3	#1 OR #2	930852
2	exp pain/	757035
1	pain.ti OR pain.ab	1458744

6. The Cochrane Library (via Ovid)

#	Search terms	
20	#19 AND MH Humans	106
19	#18 Date Limit: 2002-2010	127
18	#17 NOT #12	701
17	#3 AND #6 AND #16	62120
16	TI "DSM*" OR TI "Diagnostic and Statistical Manual" OR AB "DSM*" OR AB "Diagnostic and Statistical Manual" OR MH "Diagnostic and Statistical Manual of Mental Disorders+"	51782
13	#11 NOT #12	400
12	MeSH descriptor: [Adolescent] explode all trees OR MeSH descriptor: [Adult] single MeSH term (unexploded) OR MeSH descriptor: [Middle Aged] single MeSH term (unexploded) OR MeSH descriptor: [Young Adult] single MeSH term (unexploded) OR MeSH descriptor: [Child] explode all trees OR MeSH descriptor: [Infant] explode all trees	6611890
11	#3 AND #6 AND #9 AND #10	1368
10	Reporting:ti,ab OR Expressing:ti,ab OR Communication:ti,ab	455207
9	#7 OR #8	2482157
8	MeSH descriptor: [Emotions] explode all trees OR MeSH descriptor: [Mental Health] explode all trees OR MeSH descriptor: [Mental Disorders] explode all trees OR MeSH descriptor: [Affective Symptoms] explode all trees OR MeSH descriptor: [Depression] explode all trees	1740869
7	Affect:ti,ab OR Emotion:ti,ab OR Mood:ti,ab OR Psychological:ti,ab OR "Mental health":ti,ab OR Distress:ti,ab OR Depression:ti,ab OR Anxiety:ti,ab OR Panic:ti,ab OR "Post-traumatic stress disorder":ti,ab OR "Post traumatic stress disorder":ti,ab OR PTSD:ti,ab	1213873
6	#4 OR #5	2257078

³ Excludes "aged" as a category (i.e. "adult" does not include over 65s)

5	MeSH descriptor: [Aged] explode all trees	2146386
4	"older people":ti,ab OR geriatric:ti,ab OR elder*:ti,ab OR "older adults":ti,ab OR retired:ti,ab	307916
3	#1 OR #2	990018
2	MeSH descriptor: [Pain] explode all trees	787048
1	pain:ti,ab	561505

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19.2. Appendix 2 – Scales

19.2.1.PACSLAC

Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC)

Indicate with a checkmark, which of the items on the PACSLAC occurred during the period of interest. Scoring the sub-scales is derived by counting the checkmarks in each column. To generate a total pain sum all sub-scale totals.

Facial Expression	Present
Grimacing	
Sad look	
Tighter Face	
Dirty Look	
Change in Eyes (Squinting, dull, bright, increased eye movements)	
Frowning	
Pain Expression	
Grim Face	
Clenching Teeth	
Wincing	
Open Mouth	
Creasing Forehead	
Screwing Up Nose	

Activity/Body Movement	Present
Fidgeting	
Pulling Away	
Flinching	
Restless	
Pacing	
Wandering	
Trying to Leave	
Refusing to Move	
Thrashing	
Decreased Activity	
Refusing Medications	
Moving Slow	
Impulsive Behaviours (Repeat Movements)	
Uncooperative/Resistance to care	
Guarding Sore Area	
Touching/Holding Sore Area	
Limping	
Clenching Fist	
Going into Fetal Position	
Stiff/Rigid	

Social/Personality/Mood	Present
Physical Aggression (e.g. pushing people and/or objects, scratching others, hitting others, striking, kicking).	
Verbal Aggression	
Not Wanting to be Touched	
Not Allowing People Near	
Angry/Mad	
Throwing Things	
Increased Confusion	
Anxious	
Upset	
Agitated	
Cranky/Irritable	
Frustrated	

Other (Physiological changes/Eating Sleeping Changes/Vocal Behaviors)	Present
Pale Face	
Flushed, Red Face	
Teary Eyed	
Sweating	
Shaking/Trembling	
Cold Clammy	
Changes in Sleep Routine (Please circle 1 or 2) 1) Decreased Sleep ----- 2) Increased Sleep During the Day	
Changes in Appetite (Please circle 1 or 2) 1) Decreased Appetite ----- 2) Increased Appetite	
Screaming/Yelling	
Calling Out (i.e. for help)	
Crying	
A Specific Sound of Vocalization For pain "ow," "ouch"	
Moaning and groaning	
Mumbling	
Grunting	
Total Checklist Score	

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19.2.2.DOLOPLUS-2

DOLOPLUS-2 SCALE

BEHAVIOURAL PAIN ASSESSMENT IN THE ELDERLY

NAME :		Christian Name :	Unit :	DATES			
Behavioural Records							
SOMATIC REACTIONS							
1 • Somatic complaints	• no complaints	.....		0	0	0	0
	• complaints expressed upon inquiry only	.....		1	1	1	1
	• occasional involuntary complaints	.....		2	2	2	2
	• continuous involuntary complaints	.....		3	3	3	3
2 • Protective body postures adopted at rest	• no protective body posture	.....		0	0	0	0
	• the patient occasionally avoids certain positions	.....		1	1	1	1
	• protective postures continuously and effectively sought	.....		2	2	2	2
	• protective postures continuously sought, without success	.....		3	3	3	3
3 • Protection of sore areas	• no protective action taken	.....		0	0	0	0
	• protective actions attempted without interfering against any investigation or nursing	.....		1	1	1	1
	• protective actions against any investigation or nursing	.....		2	2	2	2
	• protective actions taken at rest, even when not approached	.....		3	3	3	3
4 • Expression	• usual expression	.....		0	0	0	0
	• expression showing pain when approached	.....		1	1	1	1
	• expression showing pain even without being approached	.....		2	2	2	2
	• permanent and unusually blank look (voiceless, staring, looking blank)	.....		3	3	3	3
5 • Sleep pattern	• normal sleep	.....		0	0	0	0
	• difficult to go to sleep	.....		1	1	1	1
	• frequent waking (restlessness)	.....		2	2	2	2
	• insomnia affecting waking times	.....		3	3	3	3
PSYCHOMOTOR REACTIONS							
6 • washing &/or dressing	• usual abilities unaffected	.....		0	0	0	0
	• usual abilities slightly affected (careful but thorough)	.....		1	1	1	1
	• usual abilities highly impaired, washing &/or dressing is laborious and incomplete	.....		2	2	2	2
	• washing &/or dressing rendered impossible as the patient resists any attempt	.....		3	3	3	3
7 • Mobility	• usual abilities & activities remain unaffected	.....		0	0	0	0
	• usual activities are reduced (the patient avoids certain movements and reduces his/her walking distance)	.....		1	1	1	1
	• usual activities and abilities reduced (even with help, the patient cuts down on his/her movements)	.....		2	2	2	2
	• any movement is impossible, the patient resists all persuasion	.....		3	3	3	3
PSYCHOSOCIAL REACTIONS							
8 • Communication	• unchanged	.....		0	0	0	0
	• heightened (the patient demands attention in an unusual manner)	.....		1	1	1	1
	• lessened (the patient cuts him/herself off)	.....		2	2	2	2
	• absence or refusal of any form of communication	.....		3	3	3	3
9 • Social life	• participates normally in every activity (meals, entertainment, therapy workshop)	.....		0	0	0	0
	• participates in activities when asked to do so only	.....		1	1	1	1
	• sometimes refuses to participate in any activity	.....		2	2	2	2
	• refuses to participate in anything	.....		3	3	3	3
10 • Problems of behaviour	• normal behaviour	.....		0	0	0	0
	• problems of repetitive reactive behaviour	.....		1	1	1	1
	• problems of permanent reactive behaviour	.....		2	2	2	2
	• permanent behaviour problems (without any external stimulus)	.....		3	3	3	3
COPYRIGHT				SCORE			

DOLOPLUS-2 SCALE : LEXICON

Somatic complaints

The patients expresses pain by word, gesture, cries, tears or moans.

Protective body postures adopted at rest

Unusual body positions intended to avoid or relieve pain.

Protection of sore areas

The patient protects one or several areas of his/her body by a defensive attitude or gestures.

Expression

The facial expression appears to express pain (grimaces, drawn, atonic) as does the gaze (fixed gaze, empty gaze, absent, tears).

Investigation

Any investigation whatsoever (approach of a caregiver, mobilization, care procedure, etc.).

Washing/dressing

Pain assessment during washing and/or dressing, alone or with assistance.

Mobility

Evaluation of pain in movement: change of position, transfer, walking alone or with assistance.

Communication

Verbal or non-verbal.

Social life

Meals, events, activities, therapeutic workshops, visits, etc.

Problems of behaviour

Aggressiveness, agitation, confusion, indifference, lapsing, regression, asking for euthanasia, etc.

DOLOPLUS-2 SCALE : INSTRUCTIONS FOR USE

1 • Scale use requires learning

As is the case with any new instrument, it is judicious to test it before circulating it. Scale scoring time decreases with experience (at most a few minutes). Where possible, it is of value to appoint a reference person in a given care structure.

2 • Pluridisciplinary team scoring

Irrespective of the health-care, social-care or home structure, scoring by several caregivers is preferable (physician, nurse, nursing assistant, etc.). At home, the family and other persons can contribute using a liaison notebook, telephone or even a bedside meeting. The scale should be included in the 'care' or 'liaison notebook' file.

3 • Do not score if the item is inappropriate

It is not necessary to have a response for all the items on the scale, particularly given an unknown patient on whom one does not yet have all the data, particularly at psychosocial level. Similarly, in the event of coma, scoring will be mainly based on the somatic items.

4 • Compile score kinetics

Re-assessment should be twice daily until the pain is sedated, then at longer intervals, depending on the situation. Compile score kinetics and show the kinetics on the care chart (like temperature or blood pressure). The scale will thus become an essential argument in the management of the symptom and in treatment initiation.

5 • Do not compare scores on different patients

Pain is a subjective and personal sensation and emotion. It is therefore of no value to compare scores between patients. Only the time course of the scores in a given patient is of interest.

6 • If in doubt, do not hesitate to conduct a test treatment with an appropriate analgesic

It is now accepted that a score greater than or equal to 5/30 is a sign of pain. However, for borderline scores, the patient should be given the benefit of the doubt. If the patient's behavior changes following analgesic administration, pain is indeed involved.

7 • The scale scores pain and not depression, dependence or cognitive functions

Numerous instruments are available for each situation. It is of primary importance to understand that the scale is used to detect changes in behavior related to potential pain.

Thus, for items 6 and 7, we are not evaluating dependence or independence but pain.

8 • Do not use the DOLOPLUS 2 scale systematically

When the elderly patient is communicative and cooperative, it is logical to use the self-assessment instruments. When pain is patent, it is more urgent to relieve it than to assess it ... However, if there is the slightest doubt, hetero-assessment will avoid underestimation.

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19.2.3.PAINAD

Pain Assessment in Advanced Dementia Scale (PAINAD)

Instructions: Observe the patient for five minutes before scoring his or her behaviors. Score the behaviors according to the following chart. Definitions of each item are provided on the following page. The patient can be observed under different conditions (e.g., at rest, during a pleasant activity, during caregiving, after the administration of pain medication).

Behavior	0	1	2	Score
Breathing Independent of vocalization	<ul style="list-style-type: none"> Normal 	<ul style="list-style-type: none"> Occasional labored breathing Short period of hyperventilation 	<ul style="list-style-type: none"> Noisy labored breathing Long period of hyperventilation Cheyne-Stokes respirations 	
Negative vocalization	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Occasional moan or groan Low-level speech with a negative or disapproving quality 	<ul style="list-style-type: none"> Repeated troubled calling out Loud moaning or groaning Crying 	
Facial expression	<ul style="list-style-type: none"> Smiling or inexpressive 	<ul style="list-style-type: none"> Sad Frightened Frown 	<ul style="list-style-type: none"> Facial grimacing 	
Body language	<ul style="list-style-type: none"> Relaxed 	<ul style="list-style-type: none"> Tense Distressed pacing Fidgeting 	<ul style="list-style-type: none"> Rigid Fists clenched Knees pulled up Pulling or pushing away Striking out 	
Consolability	<ul style="list-style-type: none"> No need to console 	<ul style="list-style-type: none"> Distracted or reassured by voice or touch 	<ul style="list-style-type: none"> Unable to console, distract, or reassure 	
TOTAL SCORE				

(Warden et al., 2003)

Scoring:

The total score ranges from 0-10 points. A possible interpretation of the scores is: 1-3=mild pain; 4-6=moderate pain; 7-10=severe pain. These ranges are based on a standard 0-10 scale of pain, but have not been substantiated in the literature for this tool.

Source:

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(1):9-15.

PAINAD Item Definitions

(Warden et al., 2003)

Breathing

1. *Normal breathing* is characterized by effortless, quiet, rhythmic (smooth) respirations.
2. *Occasional labored breathing* is characterized by episodic bursts of harsh, difficult, or wearing respirations.
3. *Short period of hyperventilation* is characterized by intervals of rapid, deep breaths lasting a short period of time.
4. *Noisy labored breathing* is characterized by negative-sounding respirations on inspiration or expiration. They may be loud, gurgling, wheezing. They appear strenuous or wearing.
5. *Long period of hyperventilation* is characterized by an excessive rate and depth of respirations lasting a considerable time.
6. *Cheyne-Stokes respirations* are characterized by rhythmic waxing and waning of breathing from very deep to shallow respirations with periods of apnea (cessation of breathing).

Negative Vocalization

1. *None* is characterized by speech or vocalization that has a neutral or pleasant quality.
2. *Occasional moan or groan* is characterized by mournful or murmuring sounds, wails, or laments. Groaning is characterized by louder than usual inarticulate involuntary sounds, often abruptly beginning and ending.
3. *Low level speech with a negative or disapproving quality* is characterized by muttering, mumbling, whining, grumbling, or swearing in a low volume with a complaining, sarcastic, or caustic tone.
4. *Repeated troubled calling out* is characterized by phrases or words being used over and over in a tone that suggests anxiety, uneasiness, or distress.
5. *Loud moaning or groaning* is characterized by mournful or murmuring sounds, wails, or laments in much louder than usual volume. Loud groaning is characterized by louder than usual inarticulate involuntary sounds, often abruptly beginning and ending.
6. *Crying* is characterized by an utterance of emotion accompanied by tears. There may be sobbing or quiet weeping.

Facial Expression

1. *Smiling or inexpressive*. Smiling is characterized by upturned corners of the mouth, brightening of the eyes, and a look of pleasure or contentment. Inexpressive refers to a neutral, at ease, relaxed, or blank look.
2. *Sad* is characterized by an unhappy, lonesome, sorrowful, or dejected look. There may be tears in the eyes.
3. *Frightened* is characterized by a look of fear, alarm, or heightened anxiety. Eyes appear wide open.
4. *Frown* is characterized by a downward turn of the corners of the mouth. Increased facial wrinkling in the forehead and around the mouth may appear.
5. *Facial grimacing* is characterized by a distorted, distressed look. The brow is more wrinkled, as is the area around the mouth. Eyes may be squeezed shut.

Body Language

1. *Relaxed* is characterized by a calm, restful, mellow appearance. The person seems to be taking it easy.
2. *Tense* is characterized by a strained, apprehensive, or worried appearance. The jaw may be clenched. (Exclude any contractures.)
3. *Distressed pacing* is characterized by activity that seems unsettled. There may be a fearful, worried, or disturbed element present. The rate may be faster or slower.
4. *Fidgeting* is characterized by restless movement. Squirming about or wiggling in the chair may occur. The person might be hitching a chair across the room. Repetitive touching, tugging, or rubbing body parts can also be observed.
5. *Rigid* is characterized by stiffening of the body. The arms and/or legs are tight and inflexible. The trunk may appear straight and unyielding. (Exclude any contractures.)
6. *Fists clenched* is characterized by tightly closed hands. They may be opened and closed repeatedly or held tightly shut.
7. *Knees pulled up* is characterized by flexing the legs and drawing the knees up toward the chest. An overall troubled appearance. (Exclude any contractures.)
8. *Pulling or pushing away* is characterized by resistiveness upon approach or to care. The person is trying to escape by yanking or wrenching him- or herself free or shoving you away.
9. *Striking out* is characterized by hitting, kicking, grabbing, punching, biting, or other form of personal assault.

Consolability

1. *No need to console* is characterized by a sense of well-being. The person appears content.
2. *Distracted or reassured by voice or touch* is characterized by a disruption in the behavior when the person is spoken to or touched. The behavior stops during the period of interaction, with no indication that the person is at all distressed.
3. *Unable to console, distract, or reassure* is characterized by the inability to soothe the person or stop a behavior with words or actions. No amount of comforting, verbal or physical, will alleviate the behavior.

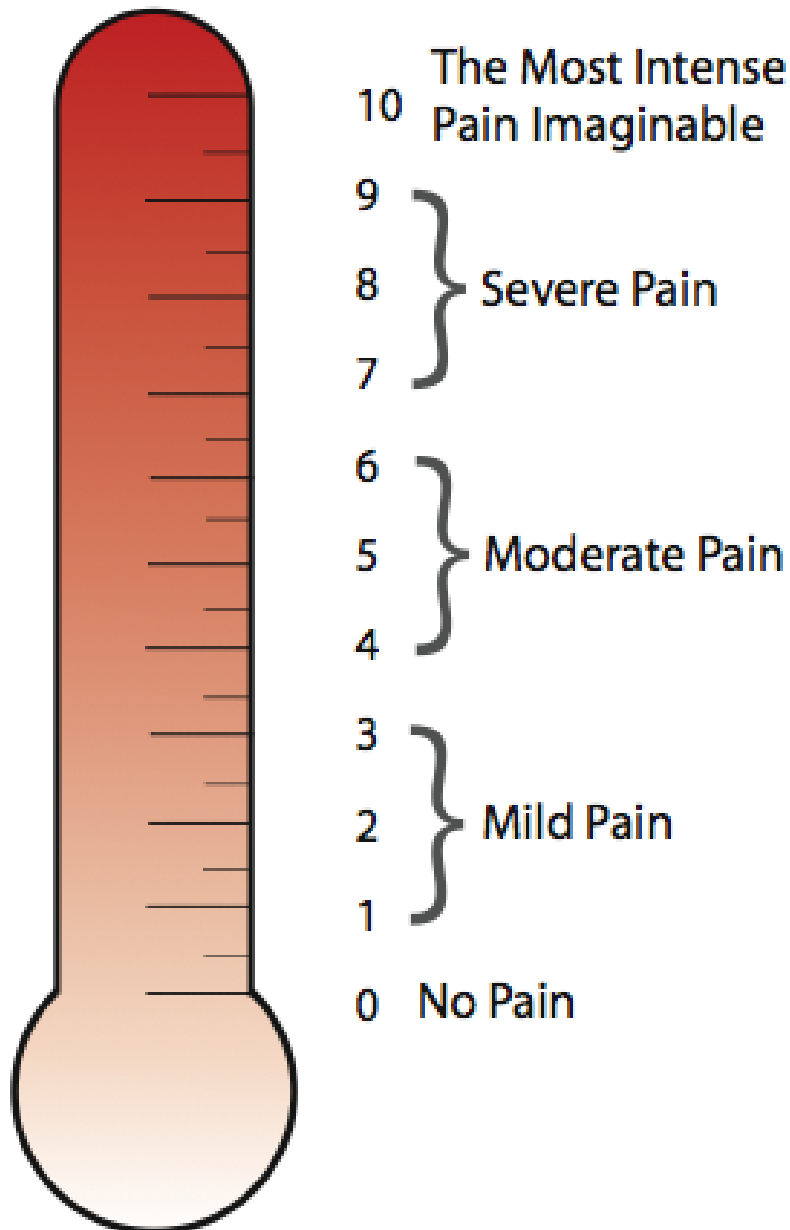
19.2.4. Abbey Pain Scale

Abbey Pain Scale							
<i>For measurement of pain in people with dementia who cannot verbalise.</i>							
How to use scale : While observing the resident, score questions 1 to 6.							
Name of resident :							
Name and designation of person completing the scale :							
Date : Time :							
Latest pain relief given was at hrs.							
Q1.	Vocalisation eg whimpering, groaning, crying <i>Absent 0 Mild 1 Moderate 2 Severe 3</i>	Q1	<input style="width: 40px; height: 25px;" type="text"/>				
Q2.	Facial expression eg looking tense, frowning, grimacing, looking frightened <i>Absent 0 Mild 1 Moderate 2 Severe 3</i>	Q2	<input style="width: 40px; height: 25px;" type="text"/>				
Q3.	Change in body language eg fidgeting, rocking, guarding part of body, withdrawn <i>Absent 0 Mild 1 Moderate 2 Severe 3</i>	Q3	<input style="width: 40px; height: 25px;" type="text"/>				
Q4.	Behavioural Change eg increased confusion, refusing to eat, alteration in usual patterns <i>Absent 0 Mild 1 Moderate 2 Severe 3</i>	Q4	<input style="width: 40px; height: 25px;" type="text"/>				
Q5.	Physiological change eg temperature, pulse or blood pressure outside normal limits, perspiring, flushing or pallor <i>Absent 0 Mild 1 Moderate 2 Severe 3</i>	Q5	<input style="width: 40px; height: 25px;" type="text"/>				
Q6.	Physical changes eg skin tears, pressure areas, arthritis, contractures, previous injuries <i>Absent 0 Mild 1 Moderate 2 Severe 3</i>	Q6	<input style="width: 40px; height: 25px;" type="text"/>				
Add scores for 1 - 6 and record here			Total Pain Score <input style="width: 50px; height: 25px;" type="text"/>				
Now tick the box that matches the Total Pain Score							
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">0 - 2 No pain</td> <td style="width: 25%; text-align: center;">3 - 7 Mild</td> <td style="width: 25%; text-align: center;">8 - 13 Moderate</td> <td style="width: 25%; text-align: center;">14 + Severe</td> </tr> </table>	0 - 2 No pain	3 - 7 Mild	8 - 13 Moderate	14 + Severe	
0 - 2 No pain	3 - 7 Mild	8 - 13 Moderate	14 + Severe				
Finally, tick the box which matches the type of pain			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center;">Chronic</td> <td style="width: 33%; text-align: center;">Acute</td> <td style="width: 33%; text-align: center;">Acute on Chronic</td> </tr> </table>	Chronic	Acute	Acute on Chronic	
Chronic	Acute	Acute on Chronic					
Abbey, J; De Bellis, A; Piller, N; Esterman, A; Giles, L; Parker, D and Lowcay, B. Funded by the JH & JD Gunn Medical Research Foundation 1998 - 2002 (This document may be reproduced with this acknowledgement retained)							

Abbey, J., De Bellis, A., Piller, N., Esterman, A., Giles, L., Parker, D., Lowcay, B. The Abbey Pain Scale. Funded by the JH & JD Gunn Medical Research Foundation 1998–2002 Reproduced with permission from the Mark Allen Group, publishers of the *International Journal of Palliative Nursing*.

19.2.5. Iowa Pain Thermometer

Circle a number on the Pain Thermometer below that best represents the intensity of your pain right now.



Used with permission Keela Herr PhD RN AGSF FAAN, College of Nursing, University of Iowa, Iowa City, IA, USA

19.2.6. Bolton Pain Assessment Tool

BOLTON PAIN ASSESSMENT TOOL (For patients with communication problems)

NHS
Frimley Health
NHS Foundation Trust

Surname.....				
First name..... Male / Female				
Date of birth			Hospital No:	
D	M	Y	NHS No:	

Use for initial assessment and then as a prompt for ongoing assessment

	NO PAIN 0	MILD 1	MODERATE 2	SEVERE 3	SCORE
VOCALISATION	None	Occasional moan or groan	Low level speech with a negative or disapproving quality	Repeatedly crying out, loud moaning or crying	
FACIAL EXPRESSION		Looking tense	Sad, Frowning	Grimacing and looks frightened	
CHANGE IN BODY LANGUAGE	None	Tense, fidgeting	Guarding part of the body	Withdrawn, rigid, fists clenched. Knees pulled up	
BEHAVIOURAL CHANGE	None	Increased confusion	Refusing to eat, alterations in usual pattern	Pulling or pushing away, striking out	
PHYSIOLOGICAL CHANGE	Normal	Occasional laboured breath, increased heart rate	Hyperventilation, increased heart rate and BP	Change in pulse BP, respiratory rate and perspiring, flushed or pallor	
PHYSICAL CHANGES	None	Skin tears	Pressure sores, arthritis	Post surgery, trauma	
TOTAL SCORE:					
Please transpose pain score onto NEWs observation chart. (Equivalent numbers to FHFT standard verbal descriptor scale are given in brackets)					
0-2 = NO PAIN (0)		3-7 = MILD PAIN (1)		9-13= MODERATE PAIN (2)	
14+ = SEVERE PAIN (3)					
Date:	Time:	Designation of person completing:			Signature:
Comments by family or usual care givers					
Pain on movement / physiotherapy					

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