

Assessment of pain in older people. Where are we now and what needs to be done?

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Abstract: The purpose of this paper is to present the findings of a review of the literature into pain and older people. The funded study was part of the development of an annotated bibliography published in August 2005. The review included all major databases and involved the collection of 214 papers between the dates of 1995 and 2005. The papers were divided into several major themes, which include experiences, management (pharmacological and non-pharmacological), assessment, and attitudes. Within this paper, the results of the review into pain assessment will be discussed, which includes 42 of the collected papers. The other sections will be published later. The paper will discuss issues pertaining to the development of specific tools for older people, a discussion of tools already available, comparisons of staff versus older people's perceptions of pain scales, and articles with cognitive impairment as a focus. Recommendations for further study are made.

Keywords: assessment tools, older people, pain behaviors, nursing homes, United Kingdom

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Submitted: January 01, 2006. **Revised:** January 14, 2006. **Accepted:** January 19, 2006.

INTRODUCTION

Whilst the consequences of chronic pain are fairly well documented, the issue concerning chronic pain in the older adult has, in the past, received less attention. For example in 1991, Melding (1) highlighted that of the 4,000 papers published annually concerning chronic pain, less than 1% addressed the issue of chronic pain in the older adult. Furthermore, a review of eight geriatric textbooks highlighted that they contained only 18 pages out of a possible 5,000 related to pain (1).

Only during the last decade have the issues pertaining to pain in the older adult started to be highlighted and primarily, much of this work has been carried out in the United States of America (USA). However, some United Kingdom (UK) studies are appearing, and recent developments are making carers consider the older population and their needs in terms of pain. The recent National Service Framework (NSF) (2) for older people does highlight the need to address chronic pain in the older adult. Furthermore, it has been suggested that it is time for clinicians to "grasp the nettle" and provide services tailored to meet the needs of the older person, as their numbers are increasing, and a population explosion in the group by 2020 is anticipated (3).

Some researchers have suggested that 50% of older people living in the community are experiencing chronic pain, and this number increases to as high as 80% within the nursing home population (4). Whilst a recent investigation by Allcock (5) reported that 37% of nursing home residents were experiencing chronic pain and that 69% of homes did

not have a policy regarding pain management. However, this study did rely only upon the reports of carers, and the investigator did not interview the residents themselves.

It has been suggested that 80% of those over the age of sixty-five suffer at least one chronic illness (6) and many such illnesses are associated with pain. For example, Brattberg et al (7) highlighted that 30% of men and 53% of women over the age of 55 experience peripheral joint pains.

Blomqvist (8) recently highlighted in her study of pain in a group of 150 older people that a range of potentially painful conditions exists, including; falls, leg ulcers, degenerative joints, and cancer. Many of these conditions were well known and visible, yet the management of pain in this group was poor.

It has even been suggested that in this group, age-related changes occur that result in complex alterations in the processing of pain through the nervous system (1,9). Examples of this phenomenon are often seen whereby patients are admitted with silent myocardial infarctions (10) and abdominal catastrophes (11,12). However, despite the relevance of these studies, which have been questioned in practice, the belief is still widespread that aging decreases pain perception. An alternative perspective to this is the belief that older people get used to pain (13).

Whilst there have been major developments in the field of pain assessment and in particular with the introduction of the McGill Pain Questionnaire as a multidimensional pain tool (14). Many reasons have been cited as to why pain assessment is poor with the older age group (15). The

purpose of this study was therefore to address the issues related to poor pain assessment in the older adult by reviewing the literature to date, to identify the evidence based pain assessment tools that are available for this group, and to determine where shortfalls exist to make recommendations for further reliability and validity testing or for developing new tools.

METHODS

All major databases were searched for articles published between the years of 1994 and 2004 (AHMED, CINAHL, MEDLINE, EMBASE, Science Citation Index, Psychlit, ageinfo, anchor housing, index for thesis, steinberg). We anticipated that the literature before this date would be sparse and out of date. Cochrane has been contacted and to date there is no systematic review of literature in this field nor are there any plans to carry out such a review in the near future. The process for the collection of the literature involved the following aspects:

Population

The population include older people and by definition this will include individuals between the ages of 60-100 years.

Interventions

The whole range of interventions were examined including, pharmacological, non-pharmacological, assessment methods and complementary approaches.

Outcomes

Studies were reviewed that highlighted the clinical outcomes of interventions such as quality of life or depression. Also socio-economic information were included.

Study designs

It is anticipated that there is limited experimental research in this area and as such all study designs were included. The following search terms were used: *older people, elderly, pain, chronic pain, assessment, assessment tools, dementia*. Each study was rated using an instrument that addresses the requirements of both qualitative and quantitative studies (16).

In total, 214 articles were collected. A preliminary review by the team excluded articles that were not research based or related to chronic pain and/or older people. At this stage, 78 articles were rejected. The literature obtained was organized into five main categories as follows:

1. Socio-economic /Prevalence (8 articles)
2. Attitudes (8 articles)
3. Assessment (42 articles)
4. Experiences (40 articles)
5. Management (40 articles)

For the purpose of this paper, the authors will discuss the articles related to assessment only. The articles were

published in Sweden, USA, Australia, Canada, and The Netherlands, with only one article published in the UK (15). Only peer reviewed, research-based articles were included in the review. The authors of the publications used a range of clinical settings from community to residential care, nursing homes, and specialized geriatric care units. The oldest participants in the studies were 97 years, with the youngest being 17 years. Although, the latter included participants that were under the selection criteria age group, this study was included as the authors compared pain assessment in this group against an older age group.

The sample sizes in the studies ranged from 19 in the smallest sample to 758 in the largest sample, although some studies used staff and others used patients/residents. There was also a difference between the studies in terms of whether the investigators included those with cognitive impairment in their sample. For the purpose of the review, the literature has been divided into several major themes which will be discussed as follows:

Testing tools already available

Fifteen of the papers reviewed were designed to consider established pain tools that were already applied to adult care. For example Blomqvist and Hallberg (17) looked at the use of verbal descriptors in residential care in Sweden. Other investigators actually compared a range of scales; for example, Closs et al (15) looked at five different scales across a range of care home settings in the UK and was able to conclude with her sample that the Verbal Rating Scale (VRS) was the most successful, followed by the numbers rating scale (NRS). The color scale (CS) and faces scale (FS) were not completed. Kaasalainen and Crook (18) supported this finding in their study in Canada, with the NRS being more popular and similar problems were associated with the FS. Again in the USA, Krulewitch et al (19) found similar results in that the pain intensity scale (PIS) was more successful than other scales used with their group in the community. Clearly, the FS is not a popular choice with older adults based upon the literature reviewed. Although, in contrast to these findings, Taylor (20) evaluated the FS in a community setting with 39 black older adults and found that this was the most popular scale, with her sample suggesting that there may be some cultural differences in the preference of pain scales. Nevertheless, this sample was very small and all the participants were cognitively intact compared with the samples in the other studies.

A number of the studies reviewed considered the use of the minimum data set (MDS). The minimum data set (MDS) is a health assessment that is completed quarterly and includes measures of frequency and intensity of pain on a three point likert scale with verbal descriptors and can be completed by either the resident (if capable) or the licensed practical nurse (21). Although, some of the studies reviewed suggest that this scale tends to under-report pain in residents with cognitive impairment (21-23), which appears to be a

consistent problem highlighted by many authors. Furthermore, Jenq et al (24) found that where the MDS was in place, pain was assessed quarterly, but seldom assessed daily, so it would seem that the assessment was carried out as a policy issue as opposed to enhancing patient care.

Other scales that have been evaluated in the literature include the NVPAT (23), the PPQ (21) and facial expression (25), which all authors suggested were appropriate for use in older people with cognitive impairment. However, the numbers in each of these studies was very small and they all suggest that further work has to be done.

It is evident from the review so far that many of the pain assessment scales have been used with older adults, but generally in small-scale studies with a whole range of confounding variables. Nevertheless, there is some suggestion about which may be more appropriate with this group and which may not. Clearly, a need exists to investigate the scales in a much larger multi-center study in which confounding variables may be controlled. As suggested by (24), many of these scales are being used with older people, but reliability and validity testing must be performed, and the needs of the older person with cognitive impairment must be addressed for true assessments of pain to be made (26).

Developing tools

The number of papers that actually developed tools was smaller; six papers in total were reviewed for this section. Ferrell et al (27) developed a pain questionnaire, which they tested against the McGill Pain Questionnaire in a group of 176 older adults. The authors reported some success with this geriatric pain measure, which consists of 24 items and provides an indication of the effects of pain upon activities of living. However, there may be some issues in terms of cross cultural use, and the scale does not measure intensity.

One of the earliest and most documented pain-assessment tools that was developed specifically for individuals with cognitive impairment was the DS Dat Scale (28). This scale was based upon behavioral indicators and was designed for use with persons with advanced Alzheimer's disease. The investigators were able to report some success with this scale in three units in the USA. However, they do not appear to have conducted any further validation or reliability studies.

Recently, a number of published papers have introduced new assessment tools. Warden (29) introduced the PAINAD scale, again based upon behaviors to measure pain in the advanced dementia group, which they tested in a patients dementia care unit in the USA. Unfortunately, this was a small scale study of only 19 participants, all of whom were males, which does mean that further work will have to be carried out. A promising Australian study conducted by Davis et al (30) and reported in two papers involves the development and validation of a behavioral scale for people with cognitive impairment. The authors based their work upon the tool of Hurley et al (28) and related literature

followed by an expert panel review and testing in extended care units. The sample size was very small, and the authors found that the tool was not completed as the staff said that it was too complicated, therefore they recommended further refinement.

More recently, two interesting pain tools were developed by Abbey et al (31) and Wary (32). Both scales are based upon behaviors and both authors provide evidence of reliability and validity of their tools. It will be interesting to watch the developments with these pain scales in the future, and they can only serve to enhance the care of the cognitively impaired older adult. In conclusion, this section of the literature seems to have identified a number of pain scales that may be appropriately applied to older adults with varying degrees of cognitive impairment. The emphasis now will be to refine and test these scales as opposed to developing more scales.

Residents versus staff comparisons

Three papers were identified that explored the differences between residents and staff perceptions of pain. As highlighted earlier, a number of studies have explored the attitudes of staff in caring for the older adult in pain. These studies stem from the USA, Sweden, and the UK, and generally explore the barriers to effective pain management (5,33-35) with recommendations for further education and training in issues surrounding pain and management for staff working with older adults, however, the studies included in this paper focus upon issues surrounding pain assessment.

A study by Bergh and Sjostrum (36) conducted a structured interview of residents and staff of geriatric units in Sweden to compare nurses' and patients' assessments of pain. The authors used 39 patients for the study, although 4 were excluded because they were unable to complete the visual analogue scale due to cognitive impairments. Whilst 66 nurses were eligible to take part in the study, included were only the 39 that were in contact with the residents. The investigators were able to conclude that the nurses tended to overestimate mild pain but to underestimate severe pain. Furthermore, as there was a difference between the ratings of tolerance—nurses with more training were better at assessment—it was difficult to determine the methodology with this study. Although, the authors discuss the use of interviews, they do not describe what questions were actually asked.

A second study was designed to determine the most appropriate pain assessment tools to identify pain in older adults with cognitive impairment. Krulewitch et al (19) compared staff and older people's assessments in the community in USA. They used a sample of 156 dementia sufferers and found that both staff and patients tended to assess pain more succinctly and comparatively when using the pain intensity scale.

Only one study actually looked at non-nursing staff. Cohen-Mansfield and Lipson (37) looked at physician

assessments of pain in a nursing home population. The authors found that geriatrician assessments of pain were both reliable and valid until the level of cognitive impairment in the resident increased. Unfortunately, the authors used only four geriatricians within this study, which is far too small to be generalizable.

The scarcity of research into carers' versus older persons' perceptions of pain and assessment does appear evident within this review. In particular, it would be interesting to compare assessments within various members of the MDT, for example, nurses, physicians, and possibly physiotherapists.

Cognitive impairment as the focus

A number of papers discussed earlier do include older people with cognitive impairments (CI) within their samples, and some papers demonstrate the development of assessment scales particularly for this group. Nine of the reviewed studies focused specifically on the needs of the older adult with CI, and these will be discussed within this section. Some of the early papers in this area suggest that a need exists to identify and develop behavioral pain assessment tools that are particularly appropriate for this group (38,39), and it could be suggested that at this stage, this work has actually been carried out. For example, as discussed previously, there appears to be a consistency in behaviors associated with pain, and scales produced by Abbey et al (31) and Wary (32) are now available for practice. Whilst further work may have to be done to validate such tools, we have moved on and we do recognize that pain in the cognitively impaired older adult is an issue.

Some of the work identifies the perspective that nurses do identify and treat pain better in the cognitively intact older adult (40), which again is fairly well acknowledged. Additionally, studies have identified that older adults with CI tend to have less pain medication than do cognitively intact residents (41), and that although CI residents tend to under-report pain, their reports are no less valid than their cognitively intact counterparts (42). Although, the study by Scherder et al (43) does contradict this finding in that they report that older adults with CI have less intense pain; others suggest that the ability to localize pain decreases with increasing CI (44). All of these are contentious issues.

It may be necessary to be more precise regarding the level of cognitive impairment to determine the focus of further study in this area. Many studies in the review use the Mini-Mental State Examination (MMSE) as a measure of cognitive function and some do not. There does have to be some consistency in the scales used, therefore a recognized level of CI may be identified that is consistent with all studies. For example, Kaasalainen and Crook (18) demonstrated with their study that the ability to complete various pain assessment scales varies according to the level of CI. Therefore, only severe CI adults would be unable to complete the traditional assessment scales. This finding again points to the issue of the further validation of

recognized scales in adults having various levels of CI using a standard measure of CI status.

Miscellaneous

The final selection of papers is categorized as miscellaneous because they appear to fall outside of the other categories. For example, a small study carried out in Sweden by Hall-Lord et al (45) attempted to categorize the various aspects of pain into sensory, emotional, intellectual, and existential amongst a group of older adults. Although, an interesting study, the sample size ($n = 42$) was very small. A second study in this group carried out a telephone survey of directors of nursing in USA nursing homes and asked their views on pain assessment. Again, this was an interesting study but it could be suggested that the directors may not be aware of what is happening in their homes and they may not choose to give an honest response if it puts them in a bad light.

Scherder et al (46) carried out a study looking at the cause of the most suffering within 68 care home residents in the Netherlands and concluded that chronic pain caused less suffering. This was a complicated paper and the sample size was small. A further paper by Yong et al (47) looked at the differences between younger and older adults in terms of stoicism and cautiousness and did demonstrate some interesting findings that would be worthy of further investigation. Finally an interesting study by Zarit et al (48) looked at the nature of pain in older people over time and found that pain increases with age but so too does adaptation to pain. Unfortunately, as with any longitudinal study, the sample size decreased significantly, but again this is a novel perspective with some potential for further study.

CONCLUSIONS

The aim of this review was to determine the assessment practice for dealing with older people and to consolidate published research and subsequently determine a way forward for future research in the field. Forty-two articles were found that appeared to meet the inclusion and exclusion criteria. From this total, 42,290 older people were studied in a range of community, nursing, and residential home settings in Europe, the USA, and Australia. The older people studied were experiencing various degrees of CI. Only 547 staff were actually included in the studies reviewed from a range of backgrounds, including registered nurses, managers, and unqualified caregivers. Twenty-two different pain assessment tools were tested in various settings, and some studies compared more than one tool. Within the literature, there were various perspectives on which are the best pain tools for use in this client group, with differences of opinion concerning the faces pain scale, verbal descriptors, and numerical pain scales. Eleven of the reviewed articles focused upon the discussion of issues surrounding intensity and quality of pain and whether this changes with increasing age. Overall, the investigators appear consistent in their belief that there are no changes. In

terms of cognitive impairment, eleven pain assessment tools have been developed, all of which focus upon the presence of behaviors and the ability of the staff to identify and possibly rate such behaviors. Although, many of the assessment tools developed for this group were consistent in their choice of behaviors as being representative of pain, it appears that new tools have been developed as opposed to adapting or re-testing previously developed tools.

So what can be concluded for this review? Is there a direction that has to be taken to continue study in this area? Several conclusions can be drawn and conclusions made:

- There is a need to investigate the range of pain scales in a much larger multi-centre study in which confounding variables may be controlled. Many of the scales have been tested in small samples within specific cultural groups, it may be that no one pain assessment tool is appropriate for all older people, or it may be that there is a range that could be appropriate. Perhaps future direction could address this issue and test some of the tools in a larger multi-centre study.
- The emphasis now will be to refine and test behavioral scales as opposed to developing more scales. As there appears to be enough consistency in terms of behaviors, it is perhaps time to develop the reliability and validity of scales that already exist.
- It would be interesting to compare assessments within various members of the MDT, for example, nurses, physicians, and possibly physiotherapists. None of the studies has incorporated other specialists within their research, with the exception of one that looked at physicians' assessments of pain. It would be interesting to see a more multidimensional perspective, and perhaps a lot can be learned from professions allied to medicine.
- There is an issue regarding measures of cognitive impairment. Many of the studies used the MMSE as a measure of level of CI, but some used other measures. This inconsistency again points to the issue of further validation of the recognized scales in adults with various levels of CI using a standard measure of CI status.

In conclusion, whilst a great deal of work has been done in this field over the last decade, clearly the time is right to consolidate and re-focus on what really has to be done.

ACKNOWLEDGMENTS

This study was supported by a University of Sheffield, School of Nursing and Midwifery Grant.

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