

The Assessment & Management of Pain in Older People: A Systematic Review of the Literature

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Abstract

This paper presents the findings of a systematic literature which was carried out to determine the most appropriate strategies that could be carried out for the assessment and management of pain in residents living in care homes. Five hundred and seventy-one papers were initially identified and from this total 70 papers were found to be appropriate. These papers were organised into five key themes; Assessment & Behavioural Assessment, Barriers/Attitudes/Perceptions, Cognitive Behavioural Therapy, Complementary Therapies and Education/Guidelines. Most of the papers related to pain in this group were pharmacological suggesting that health care professionals generally feel that pharmacological approaches are the only way to manage pain in this group. Nevertheless, the non-pharmacological papers do suggest that there are other methods of pain control which should be considered. Recommendations for further research are made.

Background to the Study

Pain is the most common symptom of disease and the most common complaint reported to the doctors. However chronic pain can present a perplexing problem for health care workers, which has resulted in the widespread acceptance for the need for specialized chronic pain clinics within the western world¹. While, the consequences of chronic pain are well documented, issues concerning chronic pain in older people are less well documented, for example Melding² found that of the 4000 papers published annually related to pain, less than 1% focused upon pain in the older population and that a review of eight geriatric textbooks showed that they only contained 18 out of 5000 pages on pain. The specific problems of pain management in older people have only begun to be addressed systematically over the last decade, Within the UK, the recent National Service Frameworks³ have highlighted the need to address chronic pain in the older age groups. A presentation at the International Association for the Study of pain conference⁴ suggested that it is time for clinicians to “grasp the nettle” and provide services tailored to meet the needs of the older person as numbers of older people in pain are increasing on an international level and will represent two thirds of the pain population by 2020.

Older people in care homes

Whilst it has been suggested that 50% of older people living in the community have chronic pain, it has been estimated that 45-80% of care home residents

have pain⁵. It is postulated that there are several reasons for this apparent lack of pain management. For example, Yates & Fentiman⁶ highlighted problems surrounding residents reporting pain in a sample of ten. They found that residents tend to become resigned to the pain and are ambivalent about the benefits of any action. This finding has been reinforced by Ferrell⁵ who highlights the problems associated with pharmacological management in the older population. Pharmacotherapy in the older person is complicated by the risk of adverse drug reactions in this population, which is 2-3 times higher than in younger age groups⁷. For example non-steroidal drugs are reported to cause a greater risk of gastric ulceration in the older age group^{8,9} and compliance is another factor, which has been highlighted as low as 25-50%¹⁰.

Ferrell⁵ goes on to suggest that management of pain in this group should focus upon the use of a combination of pharmacological and non-pharmacological approaches. Such approaches can enhance quality of life. A philosophy that is reinforced in study by Ross & Crook¹¹ who demonstrate the impact of pain upon care home residents in terms of mood, sleep disturbance and function and they make recommendations for the contribution that can be made by nurses in the assessment and treatment of pain in this setting.

More recently Blomqvist & Edberg¹² highlighted the important role of the nurse in terms of listening, acting upon side effects and emphasising common approaches such as distraction and mobility to manage pain.

A second problem associated with pain in this population appears to relate to lack of education amongst care home staff. Poor understanding of the use and effects of pharmacological interventions, management strategies, lack of pain assessment and skills to identify pain behaviours have all been identified as possible reasons for poor pain management. Cohen-Mansfield & Lipson¹³ (2002) highlighted recently that 22% of 79 care home residents had reported pain to staff, but it had not been documented. A recent investigation by Allcock et al¹⁴ reported that 37% of care home residents were experiencing chronic pain and that 69% of the homes did not have a policy regarding pain management. However, this study relied on the reports of formal carers and did not explore the pain from the residents' perspective. It is important also to consider pain from the residents' own reports, since several studies have shown a mismatch between professionals and patients ratings of pain.¹⁵ This is an issue compounded by the fact that many care home staff are health care assistants and the homes often have limited resources and limited access to continual professional development.

A further problem associated with the recognition and management of pain in this group relates to the high incidence of cognitive impairment associated with the care home population. It has been suggested that more than 50% of care home residents are cognitively impaired⁵ which consequently becomes problematic in terms of identification of pain. Although a large study conducted by Parmalee et al¹⁶ found no evidence that cognitive impairment "masked" pain complaints in a population of 750 care home residents and assessment tools have been developed that purport to measure pain in this group using behavioural indicators^{17,18}. However, how can we expect to

assess and manage pain effectively in residents with cognitive impairment, when it is evident from the literature that we are still unable to deal effectively with pain problems in older people without cognitive impairment who are able to communicate their pain. It is evident that there is a need to identify pain characteristics in this group and then to clarify the most appropriate form of management that residents are willing to utilize whilst developing the skills of care home staff in order to carry out assessment and management of pain in the cognitively impaired group.

Aim of the Study

The first phase of the project was carried out to determine the level of knowledge that currently exists. A number of studies have been conducted that suggest the potential for distraction, relaxation and heat/cold strategies. Furthermore, there is a growing body of evidence that suggests using a range of pain assessment measures. The systematic review was conducted to enable consolidation of knowledge and to develop best practice guidelines. The review questions were as follows:

1. What are the methods of non pharmacological management appropriate for dealing with pain in the older adult?
2. What are the most appropriate pain assessment tools for the measurement of pain in the older adult

The population included within the review included both male and female older people defined as over the age of sixty-five and classified as experiencing chronic non cancer pain. All methods of management were included with the exception of pharmacological approaches.

Search Strategy

All electronic data bases were searched including CINAHL, MEDLINE and EMBASE along with hand searching of conference abstracts and key policy documents. Experts in the field were contacted including the British Pain Society, Jennifer Abbey and Betty Ferrell. Inclusion and exclusion criteria were developed to exclude papers published prior to 1995 and those related to cancer pain or pharmacological management. Key words included; Older people, elderly, care home, residential home, residential care, long-term care, assessment tools, management, complementary therapies, non prescription interventions, self management. Only papers written in English were included. All studies were read independently by both researchers and graded according to the guidelines proposed by Hawker et al¹⁹. All of the papers were then organised into themes. Statistical analysis was not performed as there were insufficient papers of a similar intervention to combine.

Results of the Study

The search identified 571 papers on management. Three rounds of discussions took place and the following papers were rejected:

1st round – 274

2nd round – 192

3rd round – 35

There were 66 pharmacology papers and 22 cancer related.

From the 70 papers reviewed only four studies were randomised controlled trials. Nevertheless the papers were organised according to the themes as follows:

- Assessment & Behavioural Assessment
- Barriers/Attitudes/Perceptions
- Cognitive Behavioural Therapy
- Complementary Therapies
- Education/Guidelines

Two of the RCTs examined Cognitive Behavioural Therapy (CBT) and two studies looked at complementary therapies. It was therefore impossible to statistically analyse the results of this review. The two CBT studies included a total of 51 and 43 participants randomly assigned into two groups. Thus a total of 54 participants received CBT and for one study this was not full CBT, but one element which was “biofeedback”. This prevents analysis by combining the results as the treatments approaches were different and the numbers too small to demonstrate any significant power. Within the complementary therapies section there were three studies that carried out pretest/posttest designs. However, again the numbers were very small and the approaches were different. For example, one study looked at the effects of relaxation training (n = 14), one study looked at aromatherapy (n = 4) and one study looked at “tender touch” (n = 71). Thus again, the approaches cannot be combined for the purpose of analysis.

Seventy papers were included within this review 501 were rejected. Six main themes were identified and the papers fitted into the themes as follows; assessment (31) behavioural assessment tools (13) attitudes (13) management – psychological (4) complementary therapies (6) and educational initiatives/guidelines (3).

Sixty-six were identified as pharmacological studies and these were not reviewed as they were not considered to be appropriate for this project. It is important to note that only seventy papers related to pain management of older people in the last decade is quite a small number and somewhat significant if compared to other groups. This further reinforces that lack of priority that is associated with pain in the older adult.

In terms of study designs, the papers on pain assessment were largely survey designs or interviews and/or observations of staff to determine perceptions of patients in pain. Fifteen of the papers looked at pre-designed tools and their application to the older adult and six papers actually designed tools from scratch. Thus the majority of papers in this section were qualitative or correlational studies. The thirteen papers around attitudes of staff were all surveys or interviews. In terms of the interventional studies (13), four were randomised controlled trials, five quasi-experiments and the rest were case studies or mixed methods. The methodology is no surprise really as it would be expected that the only RCT's would be around interventions and the rest of the themes would consist of exploratory work. Each of the themes will be discussed below.

Pain Assessment

Fifteen of the papers reviewed were designed to consider established pain tools that were applied already to adult care. For example²⁰ Blomqvist & Hallberg looked at the use of verbal descriptors in residential care in Sweden. Other investigators actually compared a range of scales such as Closs et al²¹ who looked at five scales across a range of care home settings in the UK and the authors concluded that the Verbal Rating Scale (VRS) was the most successful followed by the numbers rating scale (NRS). The colour scale (CS) and faces scale (FS) were not completed.

A number of the studies that were reviewed considered the use of the minimum data set (MDS). The *minimum data set* (MDS) is a health assessment that is completed quarterly in the USA and includes measures of frequency and intensity of pain on a three point likert scale with verbal descriptors. It can be completed by either the resident (if capable) or the licensed practical nurse. Some of the studies reviewed suggest that this scale tends to under-report pain in residents with cognitive impairment which appears to be a consistent problem highlighted by many authors. Furthermore, Jenq et al²² found that where the MDS was in place, pain was assessed quarterly, but seldom assessed daily. From this it would seem that the assessment was carried in structured response to a policy rather than as an effective means by which to enhance patient care.

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 wide range of confounding variables. There are some suggestion made about which scales may be more appropriate with this group and which may not. There is an evident need to investigate the scales in a much larger multi-centre study in which confounding variables may be controlled

In terms of behavioural pain assessment scales, a total of eleven papers were identified. Each paper reported evaluation of a different scale and were all very similar in the behaviours that were identified by the investigators as being indicative of pain. Such indicators included; facial expression, body movement, mood and sleep disturbances for example. The results of this section have been reported elsewhere²³.

However, it can be concluded that further work does need to be done in this area. But the Abbey²⁴, DOLOPLUS-2²⁵ and PACSLAC²⁶ appear to be the most reliable and valid.

Psychological Interventions - Cognitive-Behavioural Therapy (CBT)/Biofeedback

This section provided four papers, two of which were doctoral theses and two unpublished papers. Psychological approaches for the management of pain have been developed and refined extensively since the introduction of the Gate Control Theory of Pain²⁷, in particular for the management of chronic

pain in adults. One such approach is based upon the belief that by changing the individuals' thoughts and beliefs about the pain, they can adopt more positive coping strategies and subsequently regain control and consequently cope with ongoing pain.

The first study in this group was a doctoral thesis that evaluated the effectiveness of CBT compared with attention support within a group of nursing home residents²⁸. The study was conducted in Canada and from a potential pool of 104 residents, 28 were recruited and assigned into two groups. Data were collected pre and post treatment and once again 4 months following intervention. Information was also collected from caregivers. The programme was conducted over a period of ten weeks and included teaching the residents a range of skills including education, reconceptualisation, relaxation, imagery, diversion and cognitive restructuring. The results of the study support the findings of other who demonstrate positive effects of psychologically based interventions and the author concluded that CBT can be applied to nursing home residents but that there is a need to be flexible to their needs and the group approach may not always be appropriate. The author suggests that although, it can be time consuming for staff, it is an approach that care staff could apply and does have the potential to save care costs in terms of medication intake and nursing care related to pain.

More recently, Kerns et al²⁹ report a case study of a 72 year old man referred to a pain centre and offered the opportunity to take part in CBT. This study further supports the positive findings suggested by Cook²⁸ and proposes that CBT is well suited to the treatment of older people with chronic pain.

Finally, twenty-two nursing home residents were invited to participate in a study by Strine³⁰ in which they were randomly assigned into a biofeedback or waiting list group and subsequently monitored for 10 weeks. The results of the study indicate that biofeedback has potential efficacy for pain reduction amongst older people resident in the nursing homes. The main problem with this study like others is the small sample size. In addition the investigators did not measure cognitive ability and therefore they are unable to suggest the cognitive ability needed by older people to ensure this approach is appropriate. Nevertheless, all the studies when viewed collectively appear to support the potential effectiveness of psychologically based programmes for older population in care homes, provided resource issues and training can be addressed.

8.2.2 Complementary Therapy

Complementary therapies are becoming increasingly popular within health care and within pain management.

The rationale is that the therapies provide adjuvant care and the increasing emphasis on a more holistic perspective to care is enhancing their popularity. The earliest paper in this group presents the findings of a 1 year project investigating the effects of gentle massage in two groups of elderly nursing home residents suffering from chronic pain and dementia in New York. Fifty-

nine of 71 residents completed the twelve week programme which was facilitated by a qualified massage therapist³¹. Dementia and/or pain was identified using the minimum data set (MDS) and then the resident's carer and/or family member was invited to take part in the training of "tender touch". Data were collected on pain and anxiety/agitation during the three month study period. The nursing assistants commented that they used the strategy when walking residents and it helped to calm them down. Family members also made positive comments. In fact the paper contains some really moving accounts of family experiences. In conclusion the authors found that the carers enjoyed using the approach and pain and anxiety scores did reduce during the study period. Although, this approach could be perceived as time consuming, the study found that following 1-2 hours of training the staff/carers could provide tender touch during periods of feeding or moving residents and so it could potentially be incorporated into mainstream care tasks as opposed to be extra.

Another paper that examined the effects of aromatherapy/massage is that of Kunstler et al³². They highlighted how in 1998 the American Geriatric Society issued guidelines for the management of pain in the elderly in which they recommend both pharmacological and non-pharmacological management of pain. They used a multiple single-subject design within an 816 bed long term care facility. Four residents were recruited into the study and the data collected included pain assessment and observations/comments from the residents. Residents included in the study had to score >24 on the MMSE (Mini-mental state examination) and they were able to sign the consent form.

The sessions were conducted by a certified therapeutic recreation specialist (CTRS) and consisted of a thirty minute hand massage and aromatherapy session in the early evening three times per week for twelve weeks. The authors reported the case studies and were able to demonstrate statistically significant reductions in participant's pain perceptions during intervention and also improved sleep patterns. Once again numbers in the study are small. However the research does suggest a way forward for future investigation and certainly no negative effects were seen amongst the participants, which suggests a safe and beneficial approach. Interestingly, part of the intervention within this study incorporated efforts to create a more positive environment in which relaxation could take place, this is similar to the findings of the authors own work^{33, 34, 35, 36, 37, 38, 39, 40}

In terms of relaxation, McBee et al⁴¹ conducted a study in nursing homes in the USA which investigated the effects of a ten week programme of relaxation training. Fourteen residents participated in the study and were given a once weekly session which covered the principles of relaxation along with the various different approaches which included meditation, music therapy, aromatherapy, and yoga and poetry readings. Group members were interviewed pre and post sessions about life satisfaction and their experiences of pain. Following interventions the group reported feeling "less sad" and did experience less pain, although this was not significantly significant. Whilst the numbers in the study were very small, again this approach did not cause any

harm and positive comments from the residents themselves indicate that this is an approach worthy of further investigation.

A different perspective is that adopted within the study by Simmons et al⁴² in which they investigated the impact of exercise on pain. This study involved randomization of residents into a control group who received no treatment and the experimental group who participated in a 32 week exercise/endurance programme. The programme consisted of mobility training and stand ups. Data were collected using the Geriatric Pain Measure and average mobility was measured prior to and following intervention. No significant changes in pain were observed with either group during the study, but the mobility of the experimental group did improve over time. However the investigators concluded that this intervention was ineffective over time; furthermore it would appear to be rather labour intensive in terms of the staff commitment necessary to conduct the exercises 2hourly for 32 weeks.

A further study in this section involved a randomized controlled trial investigating the effects of Qi therapy in a group of older people in Korea. The principles behind the approach are based upon the Chinese philosophies of the vital energy that flows through the body which can be restored through medical Qigong which is similar to the laying on of hands or healing philosophies. For this study 43 participants from a residential care community were randomly assigned into a control (general care) or Qi therapy group. Pain and mood was assessed prior to intervention and weekly post intervention for six weeks. The results suggest that Qi therapy significantly reduced pain and improved mood in the experimental group. This was a small study with some promising results. However, further work would need to be carried out and issues regarding the employment of a Qi master would need to be addressed. Wider issues regarding each of the complementary therapy studies and psychological interventions that have been reviewed appear to be related to the issue of control. Control is generally perceived as a valuable strategy for coping with pain.

The final paper reviewed by Tse et al⁴³ aimed to explore interventions used by older people in a survey. Forty-four people living in a nursing home took part in the study, the majority of which were experiencing pain (79%). This study identified issues within this population which appear to be fairly typical and have been discussed previously in terms of reluctance to report pain, fear of being labelled and the assumption that pain is a natural part of aging. Interestingly, this study identified that residents self medicate with pharmacological and non-pharmacological interventions supplied by family including oils, massage and gels. Although, the numbers were small and there may be some cultural differences, this study does support the fact that residents in care homes still want to be involved in decisions regarding their pain management, there is an issue regarding untreated pain and this group are receptive to complementary or non-conventional approaches.

Education/Guidelines

The first study in this group by Cronin⁴⁴ reported on an education programme designed to provide participants with information about pain management in order to improve their skills and sensitivity in dealing with the cognitively impaired patients in two long term nursing facilities. The staff in the facilities were given access to a seminar and then residents notes were monitored for treatment changes and staff were interviewed.

Several limitations were noted which included inability of staff to attend due to time issues and interestingly, the majority of attendees were actually unqualified care assistants which is an important point. Nevertheless, the project did demonstrate that sensitivity to pain improved with education. The second study in this category was conducted in the USA⁴⁵ a few years later and involved a mixed method study designed to explore the feasibility of introducing clinical practice guidelines for pain management within 23 long term care facilities. Less than half of the facilities (45%) implemented the guidelines in spite of the enthusiasm to do so in the first instance. The rationale for this lack of take up was based upon the fact that the guidelines were implemented without any underpinning education and they needed to be "short and sweet".

The final study reviewed was a quasi-experimental pretest/post-test which evaluated pain management education and training within 21 facilities in the USA⁴⁶.

Within each home a quality improvement team was set up and this was followed by six bimonthly education and training workshops attended by the quality improvement team. The group was then invited to audit pain management and feedback the results followed by the introduction of pain management guidelines and a tool kit of pain management strategies. Seventeen facilities completed the project and the investigators demonstrated a 41% reduction in pain prevalence during the study. The success of this study appears to be due to the initial investment towards empowering the homes by setting up an individual quality improvement team who appeared to have an investment in seeing the success of the project.

Conclusion & Recommendations

The systematic review has provided a useful insight into the state of the research around pain in care homes. It has helped to consolidate where the majority of the work has been carried out and to determine the focus for further research in this area. From this review the authors are able to make several recommendations for practice and research. It is clear that assessment scales are appropriate for the majority of older adults using numerical or verbal rating scales. These can be adopted where mild to moderate cognitive impairment is present. However in the presence of severe cognitive impairment, there are a number of behavioural scales which are well validated and highlight similar behavioural indicators. Furthermore, there is clearly a need to look more closely at the role and contribution of family carers as they can potentially provide valuable insight into the older adult's experience. A number of barriers exist amongst staff towards older adults in pain, but these can be improved by educating staff and this education should be complemented by the implementation of pain guidelines that all staff can

follow as a treatment plan which encompasses not only pharmacological approaches but also complementary and psychological based approaches such as the environment. In terms of research, there is a need to carry out more research in this area. Particularly to address the needs of older adults who are more vulnerable such as the cognitively impaired group. Furthermore collaborative multimodal pain management should be investigated further for this group for whom pharmacological approaches are less than ideal. There is still much work that can be done in both practice development and research to improve care for older adults in our society.

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