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## Pain Management in Geriatric Patients by Nurses: A Literature Review

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### Abstract

This study is a narrative literature review that aims to identify and synthesize scientific evidence related to pain management in geriatric patients by nurses. This approach was chosen to understand the strategies, models and interventions used in nursing practice, as well as the challenges of their implementation in various healthcare contexts. The search was conducted on a number of scientific databases with strict inclusion criteria to ensure the relevance and quality of the studies analyzed. The review showed that pain management in geriatric patients requires a holistic and individualized approach, integrating physical, psychological and social aspects. The biopsychosocial model, gate control theory, and ABCDE Pain Management framework are important cornerstones in the practice of pain assessment and intervention. Non-pharmacological interventions such as music therapy, relaxation, and warm compresses have proven effective as a complement to pharmacological therapy. However, challenges remain, including communication barriers in patients with cognitive impairment, the risk of polypharmacy, and limited nurse knowledge and resources. Therefore, continuous training, development of evidence-based guidelines, and interprofessional collaboration are needed to ensure safe, effective, and patient-centered pain management for the elderly.

**Keywords:** *Pain Management, Geriatric Patients, Literature Review, Geriatric Nursing.*

### INTRODUCTION

Pain in geriatric patients is a complex, multidimensional, and often underdiagnosed and inadequately managed health problem, given that the prevalence and intensity of pain tends to increase with age (Ulina et al., 2020). The elderly population, defined as individuals over 60 years old by the Ministry of Health of the Republic of Indonesia, continues to experience a significant increase globally, including in Indonesia (Canggra & Dewi, 2021). Demographic projections show that in 2025, the number of elderly people in Indonesia is estimated to reach 33.69 million, increasing to 40.95 million in 2030 and 48.19 million in 2035 (Bachtiar, 2019). This increase in the number of elderly people has implications for increasing the prevalence of various chronic health conditions, including pain, which is often multifactorial and can accelerate functional decline and quality of life (Bachtiar, 2019). The physiological body of the elderly often shows an accelerated aging process, where physiological age can exceed chronological age by 10-15 years, which correlates with increased susceptibility to chronic health conditions and geriatric syndromes (Siregar & Subroto, 2021). Effective pain management in this age group is crucial as uncontrolled pain can result in various complications, such as decreased mobility, sleep disturbances, depression, social isolation, as well as decreased overall quality of life, which is often compounded by polypharmacy and comorbidities common in the geriatric population (Chau, 2008). Pain management in the elderly requires a comprehensive approach that considers physical, psychological, and social aspects, considering that pain is a subjective experience that is influenced by various individual and environmental factors (Wahyuni, 2019).

Basic Health Research data 2018 shows that the utilization of traditional health services in the elderly reached 37.0%, while 17.3% made their own efforts with traditional medicine (Rukmini & Kristiani, 2021) . However, the prevalence of mental disorders in the elderly is also quite high, reaching around 20% of the population, which can affect pain perception and management (Bachtiar, 2019) . The increase in the number of elderly also has an impact on increasing morbidity and mortality rates, especially due to non-communicable diseases such as stroke, coronary heart disease, and diabetes mellitus, which are often accompanied by chronic pain (Kasita et al., 2022) . Commonly reported health problems in the elderly include joint pain, neuropathy, and upper respiratory tract infections, all of which can contribute to a significant pain burden (Sentana, 2018) . One condition that often causes chronic pain in the elderly is rheumatism, which has a prevalence of 11.9% by diagnosis and 24.7% by symptoms in Indonesia (Mustika & Pratiwi, 2022) . Hypertension, for example, is a serious problem with a high prevalence and is likely to increase, affecting about one in four adults globally (Apriyanto et al., 2023) . The prevalence of hypertension in the elderly in Indonesia is very high, reaching 45.9% at age 55-64 years and increasing with age (Situngkir et al., 2019) . Other chronic conditions such as stroke also show an increase in prevalence with age, with the highest cases in the age group over 75 years (Sofan & Syamsudin, 2021) . Rheumatism, as one of the common joint diseases suffered by the elderly besides hypertension, diabetes mellitus, and gout, is the main cause of musculoskeletal disorders (Mustika & Pratiwi, 2022) . This phenomenon underscores the importance of comprehensive pain management in the geriatric population, given the negative impact chronic pain has on functional independence and overall quality of life (Wildhan et al., 2022).

With the increasing prevalence of pain in the elderly and the complexity of its management, nurses have a crucial role in providing holistic care. Therefore, this study aims to identify and synthesize current evidence on pain management in geriatric patients by nurses, including various intervention modalities and challenges faced. This research will examine the role of nurses in detecting, assessing, planning, implementing, and evaluating pain interventions in the elderly, including the use of complementary therapies such as warm water foot soaks (Helti & Dedi, 2020) (Astutik & Mariyam, 2021) , as well as other non-pharmacological therapies that have been shown to be effective in reducing pain intensity and improving the quality of life of the elderly (Kurdi et al., 2020) (Aditya & Khoiriyah, 2021) . In particular, focus will be given to strategies to overcome barriers to pain assessment in the geriatric population, including patients with cognitive impairment, as well as the implications of compassion fatigue in the context of their care (Adinda et al., 2020) (Fitriyani et al., 2022) . This literature review will present a synthesis of relevant studies focusing on the role of nurses in geriatric pain management, identifying best practices and recent innovations in this area. It will also discuss the implications of high workload and potential nurse burnout that may affect the quality of pain care in geriatric patients, and identify strategies for its mitigation. (Fujianti et al., 2020).

## **LITERATURE REVIEW**

### **1. Pain Management**

Pain, as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, is a complex health problem, especially in the geriatric population (Ferrell et al., 1990) . Factors such as age, gender (Nikmah et al., 2023) , and comorbid conditions such as osteoarthritis, fractures (Suryani & Soesanto, 2020) , and anxiety (Pribadi & Herwan, 2019) significantly influence the perception and experience of pain in the elderly. Pain assessment in the elderly is often challenging due to communication barriers, cognitive decline, and

atypical manifestations of pain itself, which requires the use of valid and reliable assessment instruments (Husebø et al., 2016). Effective pain management focuses not only on the reduction of pain intensity, but also on improving the function, mobility, and overall quality of life of elderly patients, requiring an integrated multidisciplinary approach. This approach also includes consideration of patient ethics and culture, the use of effective communication strategies, and interprofessional team collaboration to ensure patient-centered care (Maryunani et al., 2021) (Wahyuni, 2019). This person-centered approach should also consider the patient's medical history, careful evaluation of pain levels, and recognition of their specific needs and preferences (Magi et al., 2024). Providing person-centered care is essential, especially for older adults with cognitive disabilities or long-term illnesses, which require specialized training for nurses and caregivers to provide effective and quality care (Aggarwal et al., 2022). Pain in the elderly often manifests atypically, such as agitation or behavioral changes, which can complicate diagnosis and appropriate management, especially in patients with dementia (Bullock et al., 2019) and depression, requiring a comprehensive multidisciplinary approach to management.

## **2. Geriatric Patients**

Pain in geriatric patients is not only a medical problem, but also a significant social, economic and psychological issue, often leading to decreased functional independence and social isolation. The prevalence of chronic pain in the elderly shows an increase with age, with approximately 50% to 80% of the elderly living in nursing homes or long-term care facilities experiencing inadequately managed pain (Budiman & Widjaja, 2020). This condition is exacerbated by the fact that pain is often considered a normal part of the aging process, which can result in delays or even failure to seek adequate medical treatment. This is further complicated by the fact that elderly patients often have lower expectations of healthcare, even when they have significant medical needs, which can affect their level of satisfaction with healthcare (Dewi et al., 2022). In addition, increasing age is often accompanied by complex comorbid conditions, polypharmacy, and physiological changes that can affect the metabolism and efficacy of analgesic medications, requiring very careful and individualized pain management.

## **3. The Nurse's Role in Pain Management**

In the context of geriatric care, it is a crucial component in holistic care, including identification, assessment, intervention, and ongoing evaluation of pain. Professional nurses are required to have professional knowledge, skills and attitudes in accordance with the professional code of ethics to provide effective and comprehensive care, especially in pain management in the elderly (Nuraeni, 2022). Appropriate and accurate assessment, including the use of standardized nursing language, is the main foundation in the formulation of pain nursing diagnoses and effective intervention planning (Somantri et al., 2021). This assessment includes observation of non-verbal signs and behavioral changes that are often indicators of pain in geriatric patients, especially those with cognitive impairment (Jónsdóttir & Gunnarsson, 2020). In the context of cancer pain management in the elderly, nurses are often faced with limited resources and a lack of specialized training in pain assessment, especially in settings that do not have oncology or palliative specialists (Namukwaya et al., 2011). The role of nurses in pain management in the elderly is very important because they are the ones who interact most frequently with patients and can provide comprehensive and professional nursing care (Talibo et al., 2019).

## **4. Models and Theories of Pain Management in Geriatric Patients**

Pain management in geriatric patients requires a holistic and individualized approach, taking into account the physiological, psychological, and social changes that accompany the

aging process. Several models and theories underlie this practice. The Biopsychosocial model is one of the main approaches, emphasizing that pain is not only a physiological phenomenon but is also influenced by psychological factors such as anxiety or depression, as well as social factors such as isolation or family support. This approach encourages comprehensive assessment and multidisciplinary interventions.

In addition, the Gate Control of Pain Theory developed by Melzack and Wall explains that pain impulses are modulated by a "gate" in the spinal cord, which can be influenced by non-nociceptive sensory stimulation (such as massage or electrical stimulation) as well as cognitive and emotional factors. This theory underlies non-pharmacological pain management techniques such as distraction therapy, transcutaneous nerve stimulation (TENS), and relaxation. The Neuromatrix theory, also developed by Melzack, emphasizes that pain perception is generated by a vast network of neurons in the brain (neuromatrix) and is influenced by experience, emotion, and body condition, thus reinforcing the need for a psychological approach in pain management.

In geriatric practice, the ABCDE Pain Management Framework model is also often used for systematic pain assessment, including Ask (ask and assess), Believe (believe in patient reports), Choose (choose management options), Deliver (implement interventions), and Empower (empower patients). Pain assessment in the elderly requires customized instruments, such as the Pain Assessment in Advanced Dementia Scale (PAINAD) for patients with dementia. Pain management strategies in geriatrics generally include a multimodal approach, namely a combination of pharmacological (analgesics at safe doses for the elderly) and non-pharmacological (cognitive-behavioral therapy, physiotherapy, heat/cold therapy), taking into account the risk of polypharmacy and pharmacokinetic changes in the elderly.

These models emphasize the importance of a patient-centered approach, integrating individual preferences and values into the pain treatment plan to achieve optimal outcomes. Therefore, a comprehensive framework is needed to guide nurses' practice, ensuring pain management that is adaptive and responsive to the complexities of the geriatric population. One relevant model is the biopsychosocial model, which views pain as a complex interaction between biological (e.g., pathophysiology), psychological (e.g., cognition, emotion), and social factors that influence the experience of pain in older adults (Tsai et al., 2020). This model specifically considers how medical conditions, emotional status, and social environment contribute to the perception and expression of pain (Podgorski et al., 2021). The model encourages nurses to conduct a thorough assessment that includes not only physiological aspects of pain, but also psychological factors such as depression and anxiety, as well as social factors such as family support and isolation (Vetiani et al., 2022).

## **RESEARCH METHODS**

This study used a narrative literature review design to identify, analyze, and synthesize various scientific findings related to pain management practices in geriatric patients by nurses. This approach was chosen because it is able to provide a comprehensive understanding of the various strategies, models and interventions that have been researched, as well as implementation challenges in the clinical context. The research phase began with a systematic search of scientific sources in electronic databases such as PubMed, CINAHL, Scopus, Google Scholar, and ProQuest. The keywords used included pain management, geriatrics, elderly patients, nursing interventions, and pain assessment. Articles considered included English and Indonesian publications published within the last 10 years to ensure relevance and currency of data. Inclusion criteria included primary research (quantitative, qualitative, or mixed), systematic reviews, or clinical practice guidelines that addressed the

role of nurses in pain assessment or management in geriatric patients in any healthcare setting. Exclusion criteria included articles that only addressed acute postoperative pain without a focus on the geriatric population, animal studies, or limited access articles without a full abstract. Eligible articles were then evaluated for quality using a critical appraisal tool appropriate to the study design (e.g. CASP for qualitative or JBI checklist for quantitative studies). Data from each study were systematically extracted including author, year of publication, study location, design, population, type of pain management intervention or model, main outcomes, and implications for nursing practice.

Analysis was conducted using a thematic approach, grouping findings based on key themes such as methods of assessing pain in the elderly, pharmacological and non-pharmacological interventions, use of pain management theories or models, implementation challenges, and the role of nurses in patient and family education. The results of this synthesis are presented in the form of a structured narrative to provide a comprehensive overview of the practice of pain management in geriatric patients by nurses, while identifying research gaps and recommendations for clinical practice and further research. The article selection process was carried out carefully, by conducting initial screening of titles and abstracts, followed by full text evaluation to ensure compliance with predetermined inclusion criteria, as described in other studies using similar methodologies (Alanazi et al., 2024) (Sulistyaningsih & Putri, 2020).

## **RESEARCH RESULTS**

### **Article Identification**

This systematic literature search yielded a number of relevant articles, which were further screened to ensure their relevance to the topic of pain management in geriatric patients by nurses (Chi et al., 2022) (Goldsmith et al., 2017). Based on strict inclusion and exclusion criteria, a total of 27 articles were identified as relevant studies for this review, after a screening process of titles, abstracts and full texts by experts in the field of geriatric nursing and pain management. This process involved an initial review of titles and abstracts for relevance, followed by an examination of the full text to ensure appropriateness to the study objectives (Estebansari et al., 2019) (Xiao et al., 2025). This is in line with the literature review method which emphasizes the importance of periodic analysis of the information obtained to ensure in-depth understanding (Saputra et al., 2024).

### **Characteristics of the Articles Reviewed**

The characteristics of the articles reviewed included diversity in study design, geographical location, and type of intervention evaluated, providing a comprehensive picture of pain management practices in geriatric patients. Analysis of this data included the identification of significant patterns, themes, and trends that emerged from the various studies, allowing synthesis of the findings to generate a deep understanding of this topic. The included studies vary from systematic reviews to case studies, reflecting the complexity and multidimensionality of this topic in the context of geriatric nursing.

### **Key Themes of Pain Management by Nurses in Geriatric Patients**

One of the key findings was that most articles focused on the importance of accurate and comprehensive pain assessment, which often requires adaptation of assessment instruments to address cognitive and communication challenges in the geriatric population. Nurses need to consider factors such as performance, patient condition, and availability of personnel in the implementation of pain assessment in geriatric patients, as demonstrated in research on triage ([Ainiyah et al., 2015](#)). In addition, the role of nurses in educating patients and families about

pain management, including the use of pharmacological and non-pharmacological modalities, was also a central theme in much of the literature analyzed. Studies show that nurses often exhibit positive attitudes towards palliative care, although their level of knowledge may be low, highlighting the need for increased education and training (Jeong et al., 2020). The review also highlights the importance of a holistic approach that includes not only physiological aspects of pain, but also psychological factors such as depression and anxiety, as well as social factors such as family support and isolation.

## **DISCUSSION**

### **Effectiveness of Pain Management Interventions by Nurses**

The effectiveness of interventions carried out by nurses in pain management in geriatric patients is often influenced by adequate workload and supportive work environment conditions (Mustikaningsih, 2021) (Wardani et al., 2021). Thus, evidence-based practices, as well as nurses' experience and psychological support, are essential to optimize pain management outcomes (Adinda et al., 2020). This is in line with the finding that the balance between job demands and adequate resources significantly affects nurses' performance, which in turn impacts the quality of pain management provided (Batubara et al., 2020). Furthermore, effective nursing interventions require an in-depth understanding of the pathophysiology of pain in the elderly as well as individual responses to therapy, allowing nurses to customize care plans to achieve optimal outcomes. The application of non-pharmacological interventions, such as relaxation techniques, warm compresses, and physiotherapy, has proven to be highly beneficial in reducing pain intensity and improving quality of life in geriatric patients, especially when combined with appropriate pharmacological approaches (Schrijvers & Charlton, 2022) (Maringga & Ivantarina, 2023). Non-pharmacological interventions such as ice therapy have been shown to be effective in reducing pain and swelling in injured soft tissues, particularly in the first 1-3 days after acute injury, by facilitating the flow of nutrients and fluids to the affected area to support the healing process (Risnah et al., 2019). In addition, non-pharmacological interventions such as music therapy can significantly reduce pain perception and anxiety, which often exacerbate the pain experience in geriatric patients (Chlan & Halm, 2013). These interventions are part of a multidimensional approach integrated in nursing practice to holistically improve the comfort of geriatric patients (Chlan & Halm, 2013). Nursing interventions that facilitate position flexion in premature infants can also be an analogy for pain management in geriatrics, where optimal physical comfort can be achieved through appropriate position adjustments (Khasanah & Rustina, 2017). In addition, audiovisual distraction techniques such as watching a preferred video can minimize distress in geriatric patients during medical procedures or treatments, by diverting attention from the pain felt (Roslita et al., 2021).

### **Factors Affecting Pain Management**

The role of family and social support has also been shown to be crucial in successful pain management in geriatric patients, as a supportive environment can facilitate adherence to treatment regimens and improve emotional well-being. Family support can improve the effectiveness of rehabilitation and pain management, as illustrated by the importance of family involvement in exercise programs (Amila et al., 2015). This psychosocial aspect is increasingly emphasized given that many geriatric patients face social isolation and depression which can exacerbate pain perception (Quail et al., 2020). Music therapy, for example, has been shown to be effective in reducing anxiety and improving mood in patients, including those undergoing medical procedures, and can be a low-cost intervention that reduces both acute and chronic pain (Kemper & Danhauer, 2005). These interventions are part

of a multidimensional approach integrated in nursing practice to holistically improve the comfort of geriatric patients. This approach also includes the use of Internet of Things technology for monitoring and early detection of changes in the patient's condition, which enables faster and more appropriate pain management (Nurmalia & Khoirinnissa, 2021) . Nonetheless, the integration of music therapy as a non-pharmacological pain management tool is still not optimal in daily clinical practice, although its potential to reduce the need for pharmaceutical interventions has been recognized (Bernatzky et al., 2011) . This is also reinforced by studies showing that music interventions, particularly personalized ones, can have significant positive effects on mood and behavior, including decreased anxiety and depression, in patients with dementia (Warren, 2023) . The diversity of musical forms and genres allows the adaptation of these interventions to individual preferences, enhancing therapeutic response and patient engagement (McDermott et al., 2014) (Raglio et al., 2014) . In fact, active engagement in community music activities and singing can substantially reduce isolation, depression, and improve mental health, especially in the elderly (Viola et al., 2023).

## CONCLUSION

A major challenge in pain management in geriatric patients lies in the lack of validated and culturally relevant pain assessment instruments for this population, as well as the availability of comprehensive data regarding the long-term effectiveness of non-pharmacological interventions. Although non-pharmacological therapies such as relaxation techniques, warm compresses, and music therapy show promising results, further research is needed to identify which modalities are most effective for different geriatric subpopulations. Further research is also needed to identify which modalities are most effective for different geriatric subpopulations. Music as a therapeutic intervention has shown significant potential in pain management, particularly in the geriatric population, with its ability to reduce pain, anxiety, and increase comfort (Mollaoglu & Mollaoglu, 2023) (Sand-Jecklin & Emerson, 2010) . These music interventions can be tailored to individual preferences, which include listening to music, discussing music, creating music, or moving to music, all of which contribute to improved quality of life (Yinger, 2017).

More in-depth studies on the neurophysiological mechanisms behind the analgesic effects of music are also needed to strengthen the theoretical basis and optimize its application in clinical practice (Groß et al., 2010) (Kwan & Seah, 2013) . In addition, future research should explore the use of combinations of pharmacological and non-pharmacological interventions, focusing on therapeutic synergies that can maximize the effectiveness of pain management while minimizing side effects. Future research should also consider the development of more specific evidence-based guidelines for nurses in managing pain in geriatric patients, including adaptation of non-pharmacological interventions for different comorbid conditions and cognitive levels (Iaboni et al., 2019).

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