

PAIN MANAGEMENT FOR ELDERLY WOMEN: A COMPREHENSIVE REVIEW OF ASSESSMENT, TREATMENT, AND MULTIDISCIPLINARY CARE

Malaa Fehaid Albadrani^{1*}, Atheer Falah Mohsen Alahmadi², Khaled Abdulrahman Habeeb³, Roba Khalid Suwailem Alluhaibi⁴, Suhaib Abdulmannan Abdulmajeed Bazarbay⁵

¹Medical city of king saud university, Riyadh, Saudi Arabia Email ID: ptmalaa1@gmail.com ORCID ID:0009-0008-8333-4482

²Dr Soliman Fakeeh hospital, Madinah, Saudi Arabia Email ID: pt.atheer0@gmail.com ORCID ID: 0009-0001-9863-6896

³Dr Soliman Fakeeh hospital, Madinah, Saudi Arabia Email ID: ka_ld17@hotmail.com ORCID ID: 0009-0003-4292-7090

⁴Dr Soliman Fakeeh hospital HHC, Madinah, Saudi Arabia Email ID: rubakhale01@gmail.com ORCID ID:0009-0009-5253-6126

⁵Dr Soliman Fakeeh hospital HHC, Madinah, Saudi Arabia Email ID: Suhaib171@gmail.com ORCID ID: 0009-0000-5143-1159

ABSTRACT

Background: Chronic pain is one of the most common health problems affecting elderly women, significantly reducing quality of life, physical functioning, emotional well-being, and independence. Aging-related physiological changes, multiple chronic illnesses, and social factors make pain assessment and management particularly complex in this population. Elderly women are more likely than men to experience chronic musculoskeletal pain, arthritis, osteoporosis-related pain, and neuropathic conditions, yet their pain is often underreported and undertreated.

Objective: This review aims to examine current evidence on pain management strategies for elderly women, focusing on accurate assessment, pharmacological and non-pharmacological interventions, and the importance of multidisciplinary care.

Methods: A narrative review of recent literature from peer-reviewed journals, clinical guidelines, and geriatric pain management studies was conducted. Databases including PubMed, Scopus, and Google Scholar were searched using terms such as “elderly women,” “chronic pain,” “pain assessment,” “geriatric pain management,” and “multidisciplinary care.”

Results: Findings indicate that effective pain management in elderly women requires individualized, multimodal approaches. Comprehensive assessment tools, including self-report scales and observational methods, improve pain identification. Pharmacological treatments such as acetaminophen, topical agents, and carefully monitored opioid therapy may provide relief, but medication use must consider age-related changes in metabolism, polypharmacy, and adverse effects. Non-pharmacological interventions—including physical therapy, exercise, cognitive-behavioral therapy, relaxation techniques, and social support—demonstrate significant benefits in reducing pain and improving function. Multidisciplinary care involving physicians, nurses, physiotherapists, psychologists, and caregivers enhances treatment outcomes and patient satisfaction.

Conclusion: Pain management for elderly women should be holistic, patient-centered, and multidisciplinary. Combining accurate assessment with individualized pharmacological and non-pharmacological strategies can improve pain control, functional ability, and overall quality of life in this vulnerable population.

KEYWORDS: Elderly women; chronic pain; geriatric pain management; pain assessment; multidisciplinary care; non-pharmacological interventions; quality of life

INTRODUCTION

Pain is one of the most common and disabling health conditions affecting older adults worldwide and represents a major public health challenge. According to the World Health Organization (WHO), the global population aged 60 years and older is expected to reach approximately 2.1 billion by 2050, resulting in a substantial increase in age-related chronic diseases and pain conditions [1]. Among older adults, women experience a disproportionately higher burden of pain compared to men due to biological, hormonal, psychosocial, and socioeconomic factors. Studies consistently demonstrate that elderly women report higher pain intensity, greater pain-related disability, and poorer quality of life from their male counterparts [2,3].

Chronic pain, defined as pain persisting for more than three months, affects approximately 25–50% of community-dwelling older adults and up to 80% of residents in long-term care facilities [4]. In elderly women, common causes of chronic pain include osteoarthritis, osteoporosis, vertebral compression fractures, rheumatoid arthritis, diabetic neuropathy, post-herpetic neuralgia, and chronic low back pain. Musculoskeletal disorders are particularly prevalent, with osteoarthritis affecting nearly one-third of women over the age of 65 years [5]. Furthermore, osteoporosis-related fractures are more common among postmenopausal women and frequently result in persistent pain, reduced mobility, and loss of independence.

The aging process itself contributes significantly to pain development and persistence. Age-related physiological changes, including degeneration of articular cartilage, decreased muscle mass, reduced bone density, and alterations in peripheral

and central nervous system processing, increase susceptibility to chronic pain syndromes [6]. Additionally, elderly women often present with multiple chronic comorbidities such as diabetes mellitus, cardiovascular disease, obesity, and depression, all of which may exacerbate pain perception and complicate treatment strategies.

Pain in older women extends beyond physical discomfort and has profound psychological, social, and economic consequences. Persistent pain is associated with functional impairment, sleep disturbances, anxiety, depression, cognitive decline, increased risk of falls, social isolation, and greater healthcare utilization [7]. Research indicates that chronic pain is one of the leading contributors to disability-adjusted life years (DALYs) among older adults globally, highlighting its substantial impact on public health systems [8].

Despite its high prevalence and significant consequences, pain among elderly women remains under-recognized and undertreated. Several barriers contribute to inadequate pain management in this population. Older women may perceive pain as a normal consequence of aging and therefore fail to report symptoms to healthcare providers. Cognitive impairment, communication difficulties, cultural beliefs, fear of medication side effects, and concerns regarding addiction may further limit appropriate treatment-seeking behaviors [9]. Healthcare providers may also underestimate pain severity in older adults or hesitate to prescribe adequate analgesia because of concerns regarding polypharmacy and adverse drug reactions.

Effective pain management in elderly women presents unique clinical challenges. Age-related changes in pharmacokinetics and pharmacodynamics alter drug metabolism and increase susceptibility to adverse medication effects. Polypharmacy, which is highly prevalent among older women, increases the risk of drug-drug interactions and medication-related complications [10]. Consequently, contemporary pain management guidelines advocate for individualized, patient-centered, and multimodal approaches that integrate pharmacological therapies with non-pharmacological interventions such as physical therapy, exercise, psychological support, cognitive-behavioral therapy, and social engagement programs. Recent evidence supports the effectiveness of multidisciplinary pain management programs in improving functional outcomes, reducing pain severity, enhancing psychological well-being, and promoting healthy aging among elderly women [7]. These approaches acknowledge the multidimensional nature of pain and emphasize collaboration among physicians, nurses, physiotherapists, psychologists, pharmacists, caregivers, and social workers. Such integrated models of care are increasingly recognized as the gold standard for managing chronic pain in geriatric populations.

Given the growing number of aging women worldwide and the substantial burden of chronic pain on health systems and society, there is a critical need to optimize pain assessment and management strategies tailored to this vulnerable population. Therefore, this review aims to examine current evidence regarding pain prevalence, assessment methods, pharmacological and non-pharmacological treatment options, and multidisciplinary approaches to pain management in elderly women. The findings may assist healthcare professionals in developing comprehensive and evidence-based interventions that improve pain control, functional independence, and overall quality of life among older women.

METHODOLOGY

Study Design

This study employed a narrative literature review design to synthesize and critically evaluate current evidence regarding pain management strategies among elderly women. The review focused on the prevalence of chronic pain, pain assessment methods, pharmacological and non-pharmacological interventions, and multidisciplinary approaches aimed at improving pain outcomes and quality of life. A literature review approach selected because it allows for the comprehensive examination and integration of evidence from diverse study designs and healthcare settings [11].

Search Strategy

A comprehensive literature search conducted using electronic databases including PubMed, Scopus, Web of Science, CINAHL, and Google Scholar. The search designed following the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure transparency and reproducibility of the review process [12].

Eligibility Criteria

Studies were included if they focused on women aged 60 years and above, addressed pain assessment or management interventions, and were published in peer-reviewed English-language journals. Editorials, conference abstracts, duplicate studies, and articles lacking relevant outcome data excluded. Data extracted from eligible studies included study characteristics, participant demographics, pain conditions, interventions, outcome measures, and key findings.

The methodological quality of included studies was assessed using established appraisal tools. Randomized controlled trials were evaluated using the Cochrane Risk of Bias Tool [13], observational studies were assessed using the Newcastle–Ottawa Scale [14], and systematic reviews were appraised using the AMSTAR 2 checklist [15,16]. Due to heterogeneity among studies, findings were synthesized narratively and organized into themes related to pain assessment, pharmacological management, non-pharmacological interventions, multidisciplinary care, and barriers to effective pain management. Ethical approval was not required because the study analyzed previously published literature.

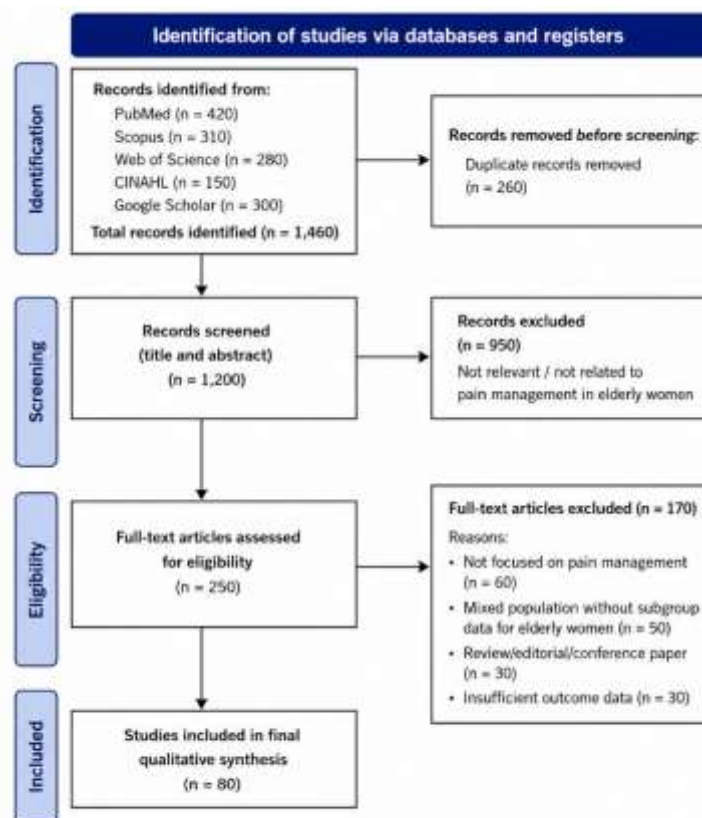
Study Selection Process

The study selection process followed the PRISMA 2020 framework [12]. All identified records were imported into a reference management software package and screened for duplicates. Titles and abstracts were reviewed against the predefined eligibility criteria. Potentially relevant studies underwent full-text review before final inclusion. The screening

process was conducted systematically to reduce selection bias and enhance methodological rigor. Any discrepancies regarding study eligibility were resolved through consensus based on the inclusion and exclusion criteria.

Data Extraction

A standardized data extraction form was developed to ensure consistency and reliability during data collection. The following information was extracted from each study: Author(s) and publication year, Country of study, Study design, Sample characteristics, Pain condition investigated, Assessment instruments utilized, Intervention type, Outcome measures, and Key findings



Source: Adapted from Page MJ, et al. *BMJ*. 2021;372:n71 (PRISMA 2020 Statement).

Figure 1: PRISMA Flow diagram

Data Synthesis

Due to expected heterogeneity in study designs, populations, interventions, and outcome measures, a narrative synthesis approach was employed [16]. Findings were grouped into major thematic categories: Epidemiology and prevalence of pain among elderly women, Pain assessment methods, Pharmacological interventions., Non-pharmacological interventions., Multidisciplinary pain management approaches., and Barriers and challenges in pain management. Common themes, patterns, and differences across studies were identified and critically analyzed to generate evidence-based recommendations for clinical practice.

Ethical Considerations

As this study involved the review and analysis of previously published literature and did not involve direct human participation, ethical approval was not required. All studies included in the review were appropriately cited and referenced in accordance with academic integrity and research ethics standards.

Reliability and Validity

Several measures were undertaken to enhance the reliability and validity of the review findings. These included the use of multiple electronic databases, predefined inclusion and exclusion criteria, standardized data extraction procedures, adherence to PRISMA guidelines, and the application of validated quality assessment instruments. These strategies minimized bias and improved the credibility of the evidence synthesis [12,13].

KEY FINDINGS AND RESULTS

Prevalence and Burden of Chronic Pain

Chronic pain is highly prevalent among elderly women and occurs more frequently and with greater severity than among elderly men. Musculoskeletal disorders, including osteoarthritis, chronic low back pain, osteoporosis, and vertebral compression fractures, are the leading causes of persistent pain in this population. These conditions significantly affect

mobility, functional independence, and overall quality of life [6,17]. Studies indicate that women report higher pain intensity, greater pain-related disability, and increased healthcare utilization compared with men [17].

Physiological and Psychosocial Determinants of Pain

The experience of pain in elderly women is influenced by a combination of physiological and psychosocial factors. Age-related changes such as sarcopenia, joint degeneration, and alterations in pain-processing pathways increase vulnerability to chronic pain [3]. Hormonal changes associated with menopause may further contribute to altered pain sensitivity and inflammatory responses [17]. In addition, chronic conditions such as diabetes, cardiovascular disease, and depression often coexist with pain and complicate treatment approaches. Psychosocial factors, including social isolation, caregiving responsibilities, economic limitations, and cultural beliefs, also influence pain perception, reporting, and adherence to treatment plans [21].

Importance of Comprehensive Pain Assessment

Accurate assessment is essential for effective pain management in elderly women. Validated assessment tools such as the Numeric Rating Scale (NRS), Visual Analog Scale (VAS), Verbal Descriptor Scale (VDS), Pain Assessment in Advanced Dementia (PAINAD), and Brief Pain Inventory (BPI) are commonly used to evaluate pain intensity and its impact on daily activities [20]. (Table 1) However, cognitive impairment, sensory deficits, and communication difficulties often complicate the assessment process. Therefore, comprehensive evaluation should include pain characteristics, functional limitations, emotional well-being, medication history, and social support systems [20].

Pharmacological Management Strategies

Pharmacological therapy remains a cornerstone of pain management among elderly women. Acetaminophen is widely recommended as a first-line treatment for mild to moderate pain due to its favorable safety profile [6]. Nonsteroidal anti-inflammatory drugs (NSAIDs) may be effective for inflammatory conditions but require cautious use because of increased risks of gastrointestinal bleeding, renal impairment, and cardiovascular events in older adults [9]. Opioids may be considered for moderate to severe pain when other treatments are ineffective; however, they are associated with risks such as sedation, falls, constipation, cognitive impairment, and dependence. Adjuvant medications, including antidepressants and anticonvulsants, have demonstrated effectiveness for neuropathic pain and pain associated with comorbid depression [6].

Effectiveness of Non-Pharmacological Interventions

Non-pharmacological interventions play a critical role in multimodal pain management. Exercise programs, physiotherapy, strength training, balance exercises, aquatic therapy, yoga, and tai chi have been shown to improve physical function and reduce pain severity [19]. Cognitive-behavioral therapy (CBT) effectively enhances coping skills, reduces pain-related anxiety, and improves psychological outcomes in older adults with chronic pain [21]. Relaxation techniques, mindfulness practices, and environmental modifications further support pain relief and functional independence while minimizing medication-related adverse effects.

Role of Multidisciplinary Care

Multidisciplinary care is considered one of the most effective approaches to managing chronic pain in elderly women. Collaboration among physicians, nurses, physiotherapists, psychologists, pharmacists, social workers, and caregivers enables comprehensive management of the biological, psychological, and social dimensions of pain [18]. Evidence suggests that multidisciplinary interventions improve pain control, physical functioning, treatment adherence, and overall quality of life while reducing healthcare utilization.

Barriers to Optimal Pain Management

Several barriers continue to limit effective pain management in elderly women. These include underreporting of pain due to cultural beliefs or fear of being perceived as a burden, cognitive impairment that affects communication, polypharmacy and associated drug interactions, limited access to specialized pain services, and inadequate provider training in geriatric pain management [6]. Addressing these barriers is essential to improving pain outcomes and quality of care.

Future Directions for Research and Practice

Future research should focus on developing gender-specific pain management strategies, improving assessment tools for cognitively impaired older adults, evaluating the long-term effectiveness of non-pharmacological interventions, and expanding telehealth-based pain management programs. Additional efforts are needed to enhance education and training for healthcare providers and caregivers to ensure evidence-based pain management practices for elderly women [21].

Table 1. Summary of Key Findings on Pain Management in Elderly Women

Theme	Key Findings	Clinical Implications
Epidemiology	Elderly women experience higher prevalence and severity of chronic pain than elderly men. Osteoarthritis, low back pain, osteoporosis, and vertebral fractures are common causes.	Early identification and targeted interventions are essential to reduce disability and improve quality of life.

Physiological Factors	Age-related musculoskeletal degeneration, reduced muscle mass, altered pain processing, and hormonal changes contribute to increased pain susceptibility.	Pain management strategies should consider biological changes associated with aging and menopause.
Psychosocial Factors	Loneliness, caregiving burden, financial limitations, depression, and cultural beliefs influence pain perception and treatment adherence.	Comprehensive care should address psychosocial determinants alongside physical symptoms.
Pain Assessment	Cognitive impairment, sensory deficits, and communication barriers complicate assessment. Tools such as NRS, VAS, VDS, PAINAD, and BPI are commonly used.	Regular multidimensional pain assessment improves diagnostic accuracy and treatment planning.
Pharmacological Management	Acetaminophen is recommended as first-line therapy. NSAIDs require caution due to adverse effects. Opioids may be effective for severe pain but carry significant risks.	Medication selection should be individualized and regularly monitored for efficacy and safety.
Adjuvant Therapies	Antidepressants, anticonvulsants, and topical analgesics are beneficial for neuropathic and localized pain conditions.	Adjuvant medications can improve outcomes while reducing opioid dependence.
Physical Therapy and Exercise	Walking, strengthening exercises, aquatic therapy, yoga, and tai chi reduce pain and improve mobility and balance.	Exercise should be incorporated into routine pain management programs.
Cognitive and Behavioral Interventions	CBT, relaxation techniques, mindfulness, and guided imagery improve coping skills and reduce pain-related distress.	Psychological interventions enhance self-management and emotional well-being.
Multidisciplinary Care	Collaboration among physicians, nurses, physiotherapists, psychologists, pharmacists, and caregivers improves outcomes.	Integrated care models provide comprehensive and patient-centered pain management.
Barriers to Care	Underreporting of pain, polypharmacy, limited specialist access, and inadequate provider training remain significant challenges.	Healthcare systems should implement standardized protocols and improve professional education.
Future Directions	Need for gender-specific interventions, improved assessment tools, telehealth expansion, and long-term evaluation of non-pharmacological therapies.	Future research should focus on personalized and accessible pain management approaches.

CONCLUSION

Chronic pain is a common and significant health problem among elderly women, substantially affecting physical functioning, emotional well-being, independence, and quality of life. The evidence reviewed demonstrates that effective pain management requires more than symptom control and should incorporate comprehensive assessment, individualized treatment planning, and ongoing evaluation.

A multimodal approach that combines pharmacological and non-pharmacological interventions provides the most effective strategy for managing chronic pain in elderly women. Exercise therapy, physiotherapy, cognitive-behavioral interventions, and psychosocial support play essential roles alongside carefully monitored medication therapy. Furthermore, multidisciplinary care models involving healthcare professionals from various disciplines offer the greatest potential for improving patient outcomes.

Healthcare providers should prioritize early pain assessment, individualized treatment plans, and integrated care strategies to address the complex needs of elderly women experiencing chronic pain. By adopting holistic and evidence-based approaches, healthcare systems can improve pain control, enhance functional independence, reduce disability, and ultimately improve the quality of life of this growing population.

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