

Pain Management in the Elderly Population

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Keywords

Non-pharmacological pain management, Holistic therapy, Geriatric pain, and Chronic pain.

Chronic pain, defined as pain lasting longer than three months, affects over 100 million individuals in the United States [1]. Among community-dwelling older adults, the prevalence ranges from 25–50%, with rates rising to 80% in institutionalized settings [2]. The elderly population, already at risk for decreased mobility, coordination, and independence, often experiences compounded challenges due to chronic pain. Consequences include emotional distress, social isolation, financial hardship, and reduced quality of life.

Older adults are often under-treated for pain and are prescribed 25% fewer medications than younger populations [1]. In seeking relief, many resort to opioid therapy, which increases the risk of dependence, polypharmacy, and adverse drug reactions. This review explores non-pharmacological alternatives, which are increasingly supported by evidence, particularly in holistic nursing practices.

This literature review emphasizes a **holistic approach to pain management** in nursing practice. While conventional medicine tends to prioritize pharmacologic treatment, holistic strategies—often underutilized offer substantial benefits. Interventions such as psychoeducational relaxation therapy (PRT), acupuncture, Tai Chi, and music therapy combined with low-frequency vibrations have shown promise in alleviating chronic pain and enhancing overall well-being in elderly populations. These therapies can lead to improved health outcomes, empower patients, and foster a more person-centered, integrative model of care.

Purpose Statement

This review aims to explore the **effectiveness of non-**

pharmacological interventions in reducing chronic pain, improving quality of life, and decreasing reliance on pharmacologic treatments among older adults. Therefore, the central research question guiding this review is:

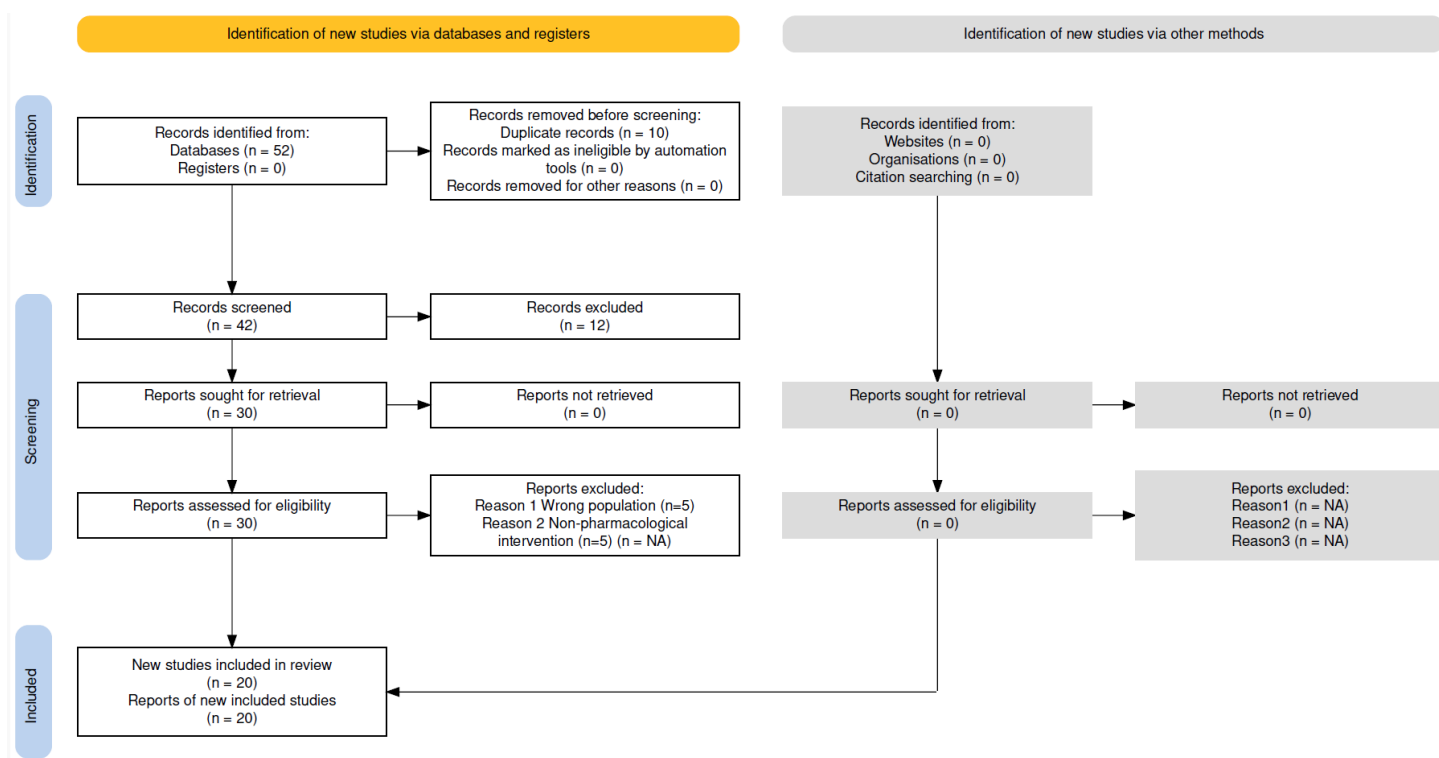
How effective are non-pharmacological interventions compared to pharmacological treatments in improving pain outcomes and quality of life among elderly individuals with chronic pain?

Theoretical Framework

The review is grounded in Barbara Dossey's Theory of Integral Nursing, which integrates complexity science, spirituality, and holistic principles. It comprises four perspectives: "I" (self-care), "IT" (physiological care), "WE" (relational care), and "ITS" (system-level structures) [3]. This framework supports patient-centered, holistic interventions and aligns with non-pharmacological pain management practices like acupuncture, relaxation therapy, and spiritual care. Healing is viewed as a reconnection with self, family, and community—an essential element in chronic pain recovery.

Literature Review

A comprehensive review of all the articles was conducted to include a wide variety of study types, such as pilot studies, observational studies, comparative studies, cross-sectional surveys, integrative reviews, qualitative and quantitative research, randomized controlled trials, systematic reviews, peer-reviewed journal articles, and thematic analyses. A search was done across several databases, including Google Scholar, CINAHL, and MEDLINE. The search time frame was from 2020 to 2025, with key phrases including "elderly chronic pain," "chronic pain in older adults," and "nonpharmacological interventions." A total of 52 different articles were reviewed initially. These were then narrowed down to 30 articles after eliminating articles that included the wrong population or did not match the purpose. Twenty-three articles were left to analyze. A detailed analysis of the literature is included.



Chronic Pain in the Elderly

Chronic pain is a prevalent and debilitating condition among the elderly, often arising from musculoskeletal issues, arthritis, neurodegenerative diseases, and vascular conditions. It can significantly impair quality of life, foster social isolation, and leads to increased dependence [2]. Managing chronic pain in older adults is particularly complex due to age-related physiological changes, comorbidities, and the limited availability of pain medications tailored for this demographic [1].

A holistic, multimodal approach has been proposed to address these challenges. Kechichian et al. [4] found that multimodal treatments—such as exercise and rehabilitation—were more effective than usual care in reducing musculoskeletal pain in older adults, with a short-term mean difference of -0.71 on a 10-point pain scale (95% CI: -1.08 to -0.34). While not statistically significant, these findings suggest the promise of non-pharmacological alternatives.

Transition Toward Non-Pharmacological Approaches

There is an observable shift in pain management practices from pharmacologic to non-pharmacologic methods. By 2019, 43.84% of adults with chronic pain were utilizing non-pharmacologic treatments, compared to just 15.52% relying on opioids [5]. This trend reflects a growing recognition of the benefits and necessity of holistic care models.

Polypharmacy remains a major concern in older adults, increasing the risk of adverse drug reactions, hospitalizations, and mortality [6]. Comprehensive geriatric assessments can help tailor pain

treatment strategies to minimize harm. Given this context, the shift to noninvasive therapies is not only prudent but potentially life-enhancing.

Choudry et al. [7] emphasize that Medicare now offers access to various non-pharmacological therapies, including chiropractic care the most commonly used therapy in this group. Increasing awareness of these resources is vital to ensuring equitable and holistic care.

Effectiveness of Non-Pharmacological Interventions

Multiple studies highlight the efficacy of non-pharmacological interventions (NPIs) in managing chronic pain:

- **Physical Therapy & CBT:** El-Tallawy et al. [8] confirmed that rehabilitation and exercise therapy are valuable for musculoskeletal pain, particularly for patients who have not responded well to medications.
- **Low-Frequency Vibration & Music Therapy:** Eshuis et al. [9] reported that combined music therapy and abdominal low-frequency vibrations safely reduced pain in older adults with moderate to severe daily pain ($\geq 4/10$), suggesting a novel intervention avenue.
- **Common NPIs:** A survey of 250 older adults showed that 92% used NPIs like distraction, thermotherapy, and physiotherapy [10].
- **Education + Therapy:** Andrews-Cooper & Kozachik [11] found that combining patient education with nonpharmacological therapies enhanced pain management, though barriers such as access and awareness persist.
- **TENS Therapy:** A meta-analysis of 381 RCTs involving

over 24,000 participants showed that TENS was effective in reducing both acute and chronic pain when compared to placebo.

Non-Pharmacologic Interventions in Long-Term Care

Residents in long-term care (LTC) facilities also benefit from integrated treatment models. Knopp-Sihota et al. [12] noted that while both pharmacologic and nonpharmacologic treatments are effective, LTC settings often underutilize non-drug approaches. Roslyakova et al. [13] showed that psychoeducational relaxation therapy (PRT) significantly improved mental quality of life and reduced depression compared to PRT combined with acceptance and commitment therapy (ACT).

Meta-Analyses and International Evidence

Meta-analyses further validate the role of non-drug approaches:

- Leung et al. [14] analyzed 25 trials ($n = 2,394$) and concluded that physical therapy and mindfulness led to improvements in pain, function, depression, and pain-related thoughts. Effect sizes ranged from small to moderate ($SMD = -0.34$ to 0.54).
- In China, He et al. [15] studied 2,197 participants and confirmed the effectiveness and sustainability of NPIs such as acupuncture, massage, and neurotherapy.

Comorbidities and Special Populations

Managing pain in older adults with dementia or multiple comorbidities presents additional challenges:

- **Dementia:** Bao & Landers [16] found that creative therapies (e.g., singing, painting) and massage were effective, though interactive pharmacologic therapies still outperformed NPIs in some cases.
- **Low Back Pain:** Fonseca et al. [17] reviewed 31 trials ($n = 2,120$) and reported low-quality but positive evidence for non-drug therapies in chronic low back pain, with small sample sizes limiting generalizability.
- **Dementia-Specific Physical Therapy:** Coronado et al. [18] showed massage to be more effective than passive range of motion for pain relief, measured using specialized tools like the PACSLAC and PAINAD.
- **Osteoarthritis:** Park et al. [19] evaluated frail older adults and found that chair yoga significantly reduced pain and its interference with daily life, providing a safe alternative for those with limited mobility.

Limitations

Several limitations were identified across the reviewed studies. A primary concern is the variability in intervention protocols, with inconsistent methods, duration, and intensity of therapies, making it difficult to compare outcomes or draw generalized conclusions. Additionally, many studies utilized small sample sizes, such as in Coronado et al. [18], which limits the external validity and generalizability of the findings.

Another critical gap is the omission of socioeconomic and accessibility factors. Many interventions were implemented by trained professionals in controlled settings, which may not reflect

the realities faced by older adults in underserved or resource-limited environments [2,11,18,20]. This lack of consideration for real-world applicability reduces the feasibility of broad implementation.

To strengthen future research, the development and use of standardized intervention protocols—including clearly defined guidelines on intervention types, frequency, and duration—are essential. These improvements would allow for more accurate assessment of efficacy and support the integration of effective nonpharmacologic strategies into routine geriatric care.

The literature strongly supports the integration of non-pharmacological approaches into chronic pain management for the elderly. These methods—ranging from physical therapy and TENS to relaxation therapy and cognitive behavioral interventions—not only address physical symptoms but also improve mental and emotional well-being. While evidence gaps remain, particularly in older adults with complex comorbidities, the existing data advocate for a more holistic, patient-centered approach in both community and institutional settings.

Discussion

The underutilization of nonpharmacological pain therapies in current clinical practice may contribute to unnecessary opioid use and suboptimal pain control among older adults. The evidence presented in this literature review highlights the potential of integrating nonpharmacological interventions—such as yoga, cognitive behavioral therapy (CBT), physical therapy, meditation, and Reiki—into chronic pain management strategies for the geriatric population. Collectively, these studies reinforce the value of holistic, patient-centered approaches in improving pain outcomes and reducing dependence on pharmacologic treatments.

Although literature generally supports the efficacy of nonpharmacologic interventions, there remains a lack of consensus regarding which modality is most effective. This inconsistency may stem from variations in study design, patient populations, duration of treatment, and outcome measures. Future research should aim to clarify these uncertainties by evaluating specific modalities, treatment durations, and combinations of therapies. Additionally, studies examining the cost-effectiveness and insurance coverage of these interventions are necessary to address accessibility and adherence issues, which are crucial determinants of real-world implementation.

This review is directly aligned with the broader conversation on chronic pain management, particularly in geriatric populations. It underscores a critical gap in care—namely, the need for sustainable, nonpharmacologic strategies that are both clinically effective and practically accessible. Despite promising findings, limited data exist on the long-term effects of these interventions, especially among individuals with multiple comorbidities. This limitation suggests the need for longitudinal studies that assess not only pain relief but also quality of life, functional outcomes, and healthcare utilization over time.

From a clinical standpoint, this review emphasizes the pivotal role nurses play in advocating for and implementing nonpharmacologic pain management strategies. As frontline providers, nurses are uniquely positioned to integrate adjunct therapies—such as applying hot or cold packs, facilitating relaxation techniques, or recommending chair yoga—into routine care. Moreover, nurses can advocate for the inclusion of holistic treatments in pain management plans, especially for patients who may benefit from non-invasive alternatives or who are at risk for opioid-related complications.

Conclusion

The integration of nonpharmacologic pain therapies represents a meaningful advancement in chronic pain management for older adults. This review not only sheds light on existing evidence but also paves the way for future research focused on optimizing holistic care strategies. By embracing these interventions, healthcare providers, especially nurses—can play a transformative role in enhancing patient outcomes, reducing opioid reliance, and promoting a more comprehensive, individualized standard of care in the aging population.

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APA Citations	Problem/Purpose	Study Design	Sample	Methods	Instruments/Tools	Theoretical Framework	Findings (Summary of major themes)	Implications	Evaluation (Major strengths and weaknesses)
Andrews-Cooper, I. N., & Kozachik, S. L. (2020). How patient education influences utilization of nonpharmacological modalities for persistent pain management: An integrative review. <i>Pain Management Nursing</i> , 21(2), 157–164. https://doi.org/10.1016/j.pmn.2019.06.016	The purpose is to determine the impact of pain education on utilization of non-pharmacologic interventions in pain management.	Integrative review	19 research articles were utilized in this integrative review.	Screening in this integrative review was done utilizing the John Hopkins Nursing evidence appraisal tool.	John Hopkins Nursing evidence appraisal tool was used to determine themes and patterns within the evidence search.	There was no theoretical framework stated in the article.	Conclusions demonstrate that education can impact the use of nonpharmacologic modalities in patients seeking pain control therapies.	This article brings forth the application of nurses providing education to geriatric populations to ensure the usage of nonpharmacologic modalities in pain management to potentiate improved patient outcomes.	The lack of awareness of nonpharmacologic modalities in pain management treatment is a barrier to application and adherence. Pain education can potentially alleviate this barrier to promote improved patient care outcomes.
Bao, Z., & Landers, M. (2022). Non-pharmacological interventions for pain management in patients with dementia: A mixed-methods systematic review. <i>Journal of Clinical Nursing</i> , 31, 1030–1040. https://doi.org/10.1111/jocn.15963	The purpose of this mixed-methods review is to evaluate the effectiveness of non-pharmacologic pain therapies in pain management for those diagnosed with dementia.	Mixed-methods systematic review	8 studies that fit within the inclusion criteria were used in this systematic review.	This mixed-method systematic review adhered to PRISMA guidelines. Databases used for this systematic review included CINAHL, MEDLINE, and PsycInfo.	Quality appraisal was obtained using the JBI and CASP checklist.	There was no theoretical framework stated in the article.	Interactive pharmacologic interventions were more beneficial in pain control versus non-pharmacologic interventions.	This review explored the various non-pharmacologic pain therapy interventions and their effectiveness on pain control.	Further investigation is required to determine efficacy of non-pharmacologic pain management interventions in patients with various levels of cognitive impairment.
Coronado, R. A., Albers, H. E., Allen, J. L., Clarke, R. G., Estrada, V. A., Simon, C. B., Galloway, R. V., & Fisher, S. R. (2020). Pain-reducing effects of physical therapist-delivered interventions: A systematic review of randomized trials among older adults with dementia. <i>Journal of Geriatric Physical Therapy</i> , 43(3), 159–169. https://doi.org/10.1519/JPT.0000000000000235	This systematic review is designed to assess the effects of physical therapists delivered interventions on pain management.	Systematic review of randomized trials	A total of 222 participants with a mean age of 82-84 years old were assessed in this systematic review.	A systematic review was conducted using MEDLINE/ PubMed, CINAHL, PsycINFO, and Web of Science databases with randomized trials assessing participants 60 years and older.	Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC), Pain in Advanced Dementia (PAINAD), and Doloplus-2 Scale tools were used to assess pain in the sample size.	There was no theoretical framework stated in the article.	Data collected supporting pain-reducing physical therapy interventions is limited.	This study highlights the need to gather more data and bring awareness to non-pharmacologic interventions for pain management such as physical therapist delivered interventions.	Further investigation gathered on the effects of active physical therapist delivered interventions on pain management is necessary to determine efficacy.
Chen, C., Pettersson, E., Summit, A. G., Boersma, K., Chang, Z., Kuja-Halkola, R., Lichtenstein, P., & Quinn, P. D. (2023). Chronic pain conditions and risk of suicidal behavior: A 10-year longitudinal co-twin control study. <i>BMC Medicine</i> , 21(9). https://doi.org/10.1186/s12916-022-02699-6	The purpose of this review is to develop a better understanding of the effects of chronic pain on suicidal behavior and self-harm.	Longitudinal co-twin control study	Twin studies totaling 17,148 participants	A Swedish twin study was conducted that included 10 years of nationwide records containing suicidal behavior dating back to 2016.	Stockholm Regional Ethics Committee approved the Study of Twin Adults: Genes and Environment (STAGE) to be utilized in this research.	There was no theoretical framework stated in the article.	Participants scoring 1 point deviation higher were 51% more likely to act on suicidal behavior. Somatic pain was highlighted to be the most common type of pain causing these statistics.	Treating pain may not reduce overall suicidal behavior due to the familial confounding.	Measuring specific types of pain and pain comorbidities could be beneficial to enhancing a better understanding of true correlation between chronic pain and suicidal behaviors.
Choudry, E., Rofé, K. L., Konnyu, K., Marshall, B. D. L., Shireman, T. I., Merlin, J. S., Trivedi, A. N., Schmidt, C., Bhondokhan, F., & Moyo, P. (2023). Treatment patterns and population characteristics of nonpharmacologic management of chronic pain in the United States' Medicare population: A scoping review. <i>Innovation in Aging</i> , 7(10), 1–13. https://doi.org/10.1093/geroni/igad085	The aim of this scoping review was to examine existing studies to gain a better understanding of how Medicare patients use non-invasive, non-pharmacological treatments for pain.	Scoping review	Medicare beneficiaries with chronic pain	These authors followed the Joanna Briggs Institute (JBI) methodology and adhered to PRISMA-ScR guidelines.	PRISMA-ScR	There was no theoretical framework stated in the article.	The findings indicated that there was limited access to non-pharmacological treatments in Medicare. Chiropractic therapy was one of the identified interventions.	This study highlights the need for policy and system-level changes to promote accessibility and equity in achieving non-pharmacological pain management.	The strength of this study is its focus on the Medicare population, which is often underrepresented in research. A limitation is that, as a literature review, it synthesizes existing studies without introducing new data or testing interventions.
Dagnino, A. P. A., & Campos, M. M. (2022). Chronic pain in the elderly: Mechanisms and perspectives. <i>Frontiers in Human Neuroscience</i> , 16, Article 829145. https://doi.org/10.3389/fnhum.2022.829145 Dydyk, A. M., & Conermann, T. (2024, May 6). Chronic pain. In <i>StatPearls</i> . StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK553030/	The purpose of this study was to explore the current state of preclinical and clinical research on chronic pain in the elderly.	Narrative Review	N/A	An analysis/synthesis of previous literature was done on chronic pain and aging mechanisms.	N/A	Neuro-biological and geriatric pain processing models	Aging alters the pain perception and chronic pain is still highly underdiagnosed and undertreated.	This study emphasizes a strong need for age-specific pain management strategies	The strength of this study was that it provided a clear and broad explanation of aging-related pain mechanisms. The weakness of this study was that it included no original data, and the conclusions were based on existing literature

El-Tallawy, S. N., Nalamasu, R., Salem, G. I., LeQuang, J. A. K., Pergolizzi, J. V., & Christo, P. J. (2021). Management of musculoskeletal pain: An update with emphasis on chronic musculoskeletal pain. <i>Pain and Therapy</i> , 10(1), 181–209. https://doi.org/10.1007/s40122-021-00235-2	The purpose of this review was to provide an overview of chronic musculoskeletal pain management, highlighting assessment strategies and evidence-based multimodal treatment interventions to address pain.	Narrative Review	N/A	A review and synthesis were completed using recent literature and clinical guidelines related to chronic musculoskeletal pain management.	N/A	There was no theoretical framework stated in the article.	As a result, it was found that chronic musculoskeletal pain is highly underdiagnosed and undertreated. The researchers recommended multidisciplinary approaches that include both pharmacological and non-pharmacological methods.	The researchers in this study supported the notion that providers should integrate multimodal approaches when managing musculoskeletal pain, with an emphasis on physical therapy and behavioral strategies.	The strength of this study was that it provided a thorough, comprehensive review of multimodal therapies. A weakness of the study is the potential for selection bias, as it did not follow a systematic review methodology.
Eshuis, T. A., Stuijt, P. J., Timmerman, H., Nielsen, P. M., Wolff, A. P., & Soer, R. (2021). Music and low-frequency vibrations for the treatment of chronic musculoskeletal pain in elderly: A pilot study. <i>PLOS ONE</i> , 16(11), e0259394. https://doi.org/10.1371/journal.pone.0259394	The objective of this pilot study is to evaluate the effects of low-frequency vibrations in treatment of elderly patients struggling with chronic musculoskeletal pain.	Pilot study	Sampling size of this study included 45 participants.	A randomized control pilot study that included participants 65 years old and older suffering with musculoskeletal pain ranging a 4 out of 10 or greater on a pain scale for longer than 3 months was utilized to determine effects of low-frequency vibrations.	The Numeric Pain Rating (NPR) scale was used to assess pain severity in this sample.	There was no theoretical framework stated in the article.	Music therapy and low frequency vibrations were well tolerated in the geriatric population.	This study highlights the lack of evidence for high versus low frequency vibration therapies on chronic pain management.	Studies demonstrated that neither low versus high frequency vibrations elicited clinically meaningful pain relief for participants.
Fonseca, L. S., Silva, J. P., Souza, M. B., Campos, M. G. M., Mascarenhas, R. O., Silva, H. D. J., Pereira, L. S. M., Oliveira, M. X., & Oliveira, V. C. (2023). Effectiveness of pharmacological and non-pharmacological therapy on pain intensity and disability in older people with chronic nonspecific low back pain: A systematic review with meta-analysis. <i>European Spine Journal</i> , 32(9), 3245–3271. https://doi.org/10.1007/s00586-023-07857-4	This article is aimed to review the effects of pharmacologic and non-pharmacologic on chronic pain management in elderly patients.	Systematic review with meta-analysis	2120 participants	Databases used in this systematic review included MEDLINE, COCHRANE LIBRARY, EMBASE, AMED, PSYCINFO, and PEDRO.	The Cochrane Risk of Bias tool was used to assess the risk of bias in the data pool. The GRADE approach was used to review confidence intervals.	There was no theoretical framework stated in the article.	Findings demonstrated poor quality in both short and long-term follow up post non-pharmacologic interventions for chronic pain management.	Further randomized control trials would be appreciated in determining efficacy of non-pharmacologic pain interventions for elderly patients suffering with chronic low-back pain.	The studies were deemed methodologically weak with small sample sizes.
Garmy, P., Forsberg, C., & Modin, S. (2021). Barbara Dossey's theory of integral nursing applied to care for the elderly. <i>Nursing Science Quarterly</i> , 34(3), 237–243. https://doi.org/10.1177/08943184211010987	This article discusses the theoretical framework Theory of Integral Nursing created by Barbara Dossey in 2010.	There is no study design for this article.	This framework can be applied to all patient populations.	This framework is designed to compliment patient caring, holistic approaches, and healing principles in patient care.	No instruments or tools were applied in this theoretical framework.	The Theory of Integral Nursing	Concepts of philosophies such as chaos, spiral dynamics, spirituality, complexity, systems, holistic approaches, and nursing theories were used as the foundation of this theoretical framework. Utilizing non-pharmacologic pain management strategies for treatment in our geriatric population promotes the holistic approach in nursing care.	This framework helps promote mind and body wellness in the application of nursing care and practice. In treatment of chronic pain, both mind and body should be treated to allow and promote best practice and promote improved patient outcomes.	This framework helps promote the treatment for chronic pain through spiritual and physical efforts.
Johnson, M. I., Paley, C. A., Jones, G., Mulvey, M. R., & Wittkopf, P. G. (2022, February 10). The clinical efficacy of transcutaneous electrical nerve stimulation (TENS) for acute and chronic pain: A protocol for a meta-analysis of randomized controlled trials (RCTs). <i>BMJ Open</i> , 12(2), e051073. https://doi.org/10.1136/bmjopen-2021-051073	This study focuses on the efficacy of transcutaneous electrical nerve stimulators (TENS) in pain management.	Systemic review and meta-analysis	A total of 381 RCTs were included.	Medline, Cochrane Central, and Embase databases were applied in this systematic review.	The Cochrane tool was utilized to assess risk for bias in this article.	N/A	This article identified the impact of TENS unit application in chronic pain management.	This article enlightens an alternative to chronic pain management therapy through TENS unit application.	This systematic review identified that TENS unit application improved pain control and severity in geriatric patients. Limitations arose in assessment of adverse effect outcomes from TENS unit application, which were poorly reported.

Johnson, M. I., Paley, C. A., Jones, G., Mulvey, M. R., & Wittkopf, P. G. (2022, February 10). The clinical efficacy of transcutaneous electrical nerve stimulation (TENS) for acute and chronic pain: A protocol for a meta-analysis of randomized controlled trials (RCTs). <i>BMJ Open</i> , 12(2), e051073. https://doi.org/10.1136/bmjopen-2021-051073	This article focuses on the sustainability and effectiveness of non-pharmacologic pain interventions.	Systematic Review	A total of 10 RCTs were included	Databases used in this systematic review included CINAHL, PubMed, MEDLINE, PsychINFO and journals@OVID	The Jadad tool was used to assess the quality of each RCT	No theoretical framework	This article evaluated the effectiveness and sustainability of non-pharmacologic interventions on pain in the elderly population.	Promoting the shift towards holistic patient-centered care. This article demonstrates how patients can have independence with this form of pain management, and it can be more cost-effective than traditional pharmacologic interventions.	This article had strong evidence for support, including twenty-three studies, which included the PRISMA guideline and used the Cochrane risk of bias tool to evaluate. The limitations included, lack of standardized metrics for results. Without this standardization, it can be difficult to compare and contrast the different methods. Additionally, there was no long-term follow-up for the effectiveness of interventions used.
He, Y., Sun, L., Wu, X., & Li, Q. (2024). Effectiveness and sustainability of non-pharmacologic therapies for chronic pain in the elderly: A systematic review. <i>International Journal of Geriatric Research</i> , 11(1), 22–30. https://doi.org/10.23937/2469-5858/1510120	The purpose of this study was to assess the effectiveness of multimodal interventions, including exercise rehabilitation, in addressing chronic musculoskeletal disorders in older adults.	Systemic review and meta-analysis	A total of 16 randomized controlled trials (RCTs) were conducted, including 2,322 older adult participants with chronic musculoskeletal disorders.	The methods included five database searches that identified the RCTs.	The Cochrane tool was used to assess bias, and meta-analyses were used to pool mean and standardized mean differences.	Not stated in the article.	The main findings highlighted that multimodal treatments led to statistically significant improvements in pain reduction, quality of life, and physical function compared to usual care or single interventions.	This study supports the integration of multimodal approaches in addressing chronic musculoskeletal pain in the older population.	The strength of this study was its comprehensive analysis using diverse interventions to address chronic pain. The weakness was variability in treatment modalities and outcome measures, which limited comparability across studies.
Kechichian, C., Avouac, J., & Chikhani, M. (2022). Multimodal treatment for chronic musculoskeletal disorders in older adults: A systematic review and meta-analysis. <i>Journal of Geriatric Physical Therapy</i> , 45(1), 34–47. https://doi.org/10.1519/JPT.0000000000000322	The purpose of this article was to assess the effectiveness of different pain management approaches. Identifying which intervention was the most successful at reducing pain.	This article was a systematic review with a meta-analysis.	Adults age greater than 60 who currently live in long term care residencies.	Databases included: MEDLINE, PsycINFO, CINAHL, and Embase.	This article used the Cochrane Risk of Bias tool to evaluate bias.	No theoretical framework	Overall, both pharmacologic and non-pharmacologic measures helped to reduce chronic pain.	The implications are to incorporate non-pharmacologic interventions to help pain control in the older population. Additionally, if medications are used to be cautious with what is chosen and try to integrate non-pharmacologic options such as massage or reiki early on.	The strengths of the article include the methodology, which followed PRISMA guidelines and used PROSPERO for their protocol. Additionally, they provided a comprehensive comparison for both pharmacologic and non-pharmacologic interventions to compare the two. Weaknesses of the article included a lack of long-term follow-up, and the potential risk of bias since it was not evaluated in this article.

Knopp-Sihota, J. A., MacGregor, T., Reeves, J. T. H., Kennedy, M., & Saleem, A. (2022). Management of chronic pain in long-term care: A systematic review and meta-analysis. <i>Journal of the American Medical Directors Association</i> , 23(9), 1507–1516.e0. https://doi.org/10.1016/j.jamda.2022.04.008	This article examined the effectiveness of nonpharmacological pain interventions in older adults with higher care needs.	This is a quantitative cross-sectional design.	The sample size was 327 people aged 60 or older who lived in an elder community.	This was an observational study that obtained the information through patient interviews.	The tool used for this study was the Brief Pain Inventory to assess pain in the participants and the Chronic Pain Acceptance Questionnaire.	There was no theoretical framework stated in the article.	The findings included that physical therapy, distraction techniques, and warm/cold compresses were the most common non-pharmacologic interventions used by the older population. Additionally, the individuals with a higher level of education were more likely to use physical therapy, as opposed to the lower education population used the heated or cold compresses. Overall, 92% of the population that participated used non-pharmacologic interventions to help in pain reduction.	Education about the different types of non-pharmacologic pain management interventions is needed, as well as more analysis on socioeconomic status and its influence on the resources these individuals have toward pain management.	The strengths of this article include the use of validated tools such as the Brief Pain Inventory and the Chronic Pain Acceptance Questionnaire to acquire information. Additionally, the assessment of socioeconomic status and its influence on what type of non-pharmacologic pain intervention they choose. The weaknesses of this article include the self-reported bias from the questionnaires, especially in the older population there may be recall bias. There is also no comparison group, which is a weakness since we have nothing to compare the findings to.
Koios, D., Kuhnert, R., Dräger, D., Wenzel, A., Kreutz, R., & Budnick, A. (2024). The use of nonpharmacological interventions for chronic pain treatment in community-dwelling older adults with a certified need for care. <i>BMC geriatrics</i> , 24(1), 731. https://doi.org/10.1186/s12877-024-05317-2	To compare the effectiveness of different non-pharmacologic pain in older adults.	This study is a systematic review and meta-analysis.	This involved 2,394 participants within 25 randomized control trials.	The databases used were Embase, PsycINFO, and MEDLINE.	The authors incorporated PRISMA guidelines and used the Methodological Quality Scale to assess for bias.	There was no theoretical framework stated in the article.	The findings included that non-pharmacologic interventions have a statistically significant impact on chronic pain in older adults. The intervention that helped the most was physical activity.	This promotes support for non-pharmacologic pain management in older adults, primarily physical activity. The findings support an early integration of physical activity to help reduce pain.	The strengths include following PRISMA guidelines, the article is valid and reliable, which helps for future research, as well as incorporating 25 articles making the data pool large. However, the weaknesses include limited long term data as well as a risk for bias since there was no bias assessment tool.
Leung, D. K. Y., Fong, A. P. C., Wong, F. H. C., Liu, T., Wong, G. H. Y., & Lum, T. Y. S. (2024). Nonpharmacological interventions for chronic pain in older adults: A systematic review and meta-analysis. <i>The Gerontologist</i> , 64(6), gnae010. https://doi.org/10.1093/geront/гнаe010	To identify which non-pharmacologic interventions are most effective.	This study is a meta-analysis.	Collected data from 25 RCTs	Databases used were the Cochrane library, Pubmed, Cinahl, and Embase.	This article followed PRISMA guidelines, and the psychological RCT scale.	There was no theoretical framework stated in the article.	The article highlighted that non-pharmacologic interventions do help with chronic pain. A few of the interventions that worked the best included, yoga, tai chi, cognitive behavioral therapy, and exercise.	This highlights the specific interventions that help reduce chronic pain, promoting further research into optimizing these non-pharmacological options and integrating them into routine pain management care. Additionally, it can be used to further conduct this research on effectiveness of these specific therapies in the older population with chronic pain.	The strengths of this article include a comprehensive review of 25 articles, which enhances the reliability and validity of the findings. They followed PRISMA guidelines and focused on one population group, which was older adults for the studies. The weaknesses included lack of long term follow up, and the effect of the intervention was small, requiring more follow up to see if the interventions are worth the time, effort and potential cost.

Leung, J., Wiles, T., & Marshall, C. (2024). Nonpharmacologic therapies for chronic pain in the elderly: A meta-analysis. <i>Pain Research and Management</i> , 2024, 1–9. https://doi.org/10.1155/2024/7635128	Impact of chair yoga on older adults with lower extremity osteoporosis.	Analysis of a randomized control study	The sample included 131 older adults aged 65 and older, with lower extremity osteoporosis and frailty.	This was an analysis of a previously conducted RCT. The original compared the outcomes of chair yoga to Health education control group to assess frailty in older adults.	The Frailty Index was used to assess the frailty of the participants.	There was no theoretical framework stated in the article.	The findings included that chair yoga reduced pain in the older adult experimental group, but it did not reduce frailty scores.	Small interventions in physical activity improve pain control for older adults. This supports the idea of non-pharmacologic therapy integration for pain control in older adults.	The strengths of this article include a comprehensive review of 25 articles, which enhances the reliability and validity of the findings. They followed PRISMA guidelines and focused on one population group, which was older adults for the studies. The weaknesses included lack of long term follow up, and the effect of the intervention was small, requiring more follow up to see if the interventions are worth the time, effort and potential cost.
Park, J., Sherman, D. G., Agogo, G., Hoogendijk, E. O., & Liu, Z. (2020). Frailty modifies the intervention effect of chair yoga on pain among older adults with lower extremity osteoarthritis: Secondary analysis of a nonpharmacological intervention trial. <i>Experimental Gerontology</i> , 134, 110886. https://doi.org/10.1016/j.exger.2020.110886	The objective of this study was to compare annual trends in the use of opioids, nonpharmacological modalities, neither, or both; to compare usage rates of specific therapies such as acupuncture and physical therapy; and to examine how pain severity influences treatment choices over time.	Retrospective cohort study	A cohort of 44,121 cancer-free adults aged 18 or older with chronic (n = 36,777) or surgical pain (n = 9,643) was identified from MEPS data ranging from 2011 to 2019.	The serial cross-sectional study was conducted using 2011–2019 MEPS Household Component data.	The MEPS Household Component survey was used.	Not explicitly stated in the study.	It was found that the use of nonpharmacological treatments surpassed opioid use over time, with physical therapy being the most commonly used nonpharmacological modality.	This study highlights the shift in pain management practices, emphasizing the growing role of nonpharmacological treatments and the need for health policy to improve access to such therapies.	The strength of this study was the large sample size, which increased reliability. As a group, we identified a weakness: potential recall bias due to the self-reported survey data, which may limit clinical interpretation.
Saravanan, A., Reagan, L., Rivera, R., Challa, N., Lankipalle, H., Sareddy, V. R. R., & Starkweather, A. (2022). Social determinants and comorbidities in non-pharmacological interventions for chronic pain in community-dwelling older adults: A scoping review of randomized controlled trials. <i>Geriatric Nursing</i> , 45, 205–214. https://doi.org/10.1016/j.gerinurse.2022.04.008	The purpose of the study was to evaluate and compare the clinical effectiveness of two psychological interventions for managing chronic pain.	Randomized controlled trial (RCT)	138 adults with chronic pain were divided into two groups: the PRT group with 84 participants and the PRT + ACT group with 54 participants.	The RCT was conducted using 138 adults with chronic pain who received either psychoeducational relaxation therapy alone or combined with acceptance and commitment therapy, with outcomes measured at baseline, post-treatment, and 3-month follow-up using standardized psychological and pain assessment tools.	The study used validated tools, including SF-36, HADS, PSS, PCS, CPAQ, and PIPS, to assess pain intensity, quality of life, mental health, stress, pain coping, and psychological flexibility at three time points.	N/A	The major theme of the study is that PRT appears to be an effective approach for managing chronic pain in psychological care.	The implication of this study is that PRT can be considered a simple and effective option for managing chronic pain in clinical practice.	A weakness of this study was that the small sample size may hinder generalizability. The strength of the study was that it used multiple validated tools to assess psychological and pain-related outcomes.
Saravanan, A., Reagan, L., Rivera, R., Challa, N., Lankipalle, H., Sareddy, V. R. R., & Starkweather, A. (2022). Social determinants and comorbidities in non-pharmacological interventions for chronic pain in community-dwelling older adults: A scoping review of randomized controlled trials. <i>Geriatric Nursing</i> , 45, 205–214. https://doi.org/10.1016/j.gerinurse.2022.04.008	The purpose of this review was to explore the evidence on nonpharmacological interventions for managing chronic pain in community-dwelling older adults with comorbid conditions.	Scoping Review	A total of 11 RCTs published between 2004 and 2022 focused on community-dwelling older adults with chronic pain and comorbidities.	The scoping review was performed using the PRISMA-ScR guidelines and Arksey and O'Malley's framework.	Studies were identified and examined using the JBI criteria.	Not stated in the article.	As a result of this review, it was found that most studies did not quantify comorbidity burden, report specific comorbidities, or measure changes over time in participants with chronic pain, highlighting the need for future research.	The implication of the study was that future research is needed to develop more holistic, individualized, nonpharmacological interventions to address chronic pain in community-dwelling older adults.	The strength of this study was its focus on community-dwelling older adults, a population that is often overlooked. The weakness was that it included only 11 studies, which may limit the generalizability of the findings.

Tang, S. K., Tse, M. M. Y., Leung, S. F., & Fotis, T. (2019). The effectiveness, suitability, and sustainability of non-pharmacological methods of managing pain in community-dwelling older adults: A systematic review. BMC Public Health, 19, 1488. https://doi.org/10.1186/s12889-019-7831-9	The purpose of this systematic review was to examine the effectiveness, appropriateness, and how sustainable nonpharmacological interventions are for managing pain in older adults living in the community.	Systemic review	The study included older adults over 65, community-dwelling, and mentally competent, with chronic non-cancer pain, across 10 RCTs.	The study used a systematic review of RCTs, screening five databases and applying the Jadad Scale to evaluate non-pharmacological pain interventions in older community-dwelling adults.	The Jadad Scale was used to evaluate the methodological quality of the included RCTs.	N/A	Most interventions effectively reduced pain and improved function, with exercise and CBT showing the highest sustainability and acceptability; however, adherence varied based on intervention type and individual preference.	This study supports the use of non-pharmacological interventions, such as exercise and CBT, as effective, suitable, and sustainable strategies for managing chronic pain in community-dwelling adults.	The strength of the study was that it used five major databases with quality appraisal tools such as the Jadad Scale. The weakness of the study was that there were only ten articles included, reducing variability in interventions and outcome measures.
Zazzara, M. B., Palmer, K., Vetrano, D. L., Carfi, A., & Onder, G. (2021). Adverse drug reactions in older adults: A narrative review of the literature. European Geriatric Medicine, 12(3), 463–473. https://doi.org/10.1007/s41999-021-00481-9	The aim of this review was to examine the various types and frequency of adverse drug reactions (ADRs) in older adults, explore age as a risk factor, and identify strategies to prevent their occurrence.	Narrative Review	N/A	Synthesis of published articles and literature on adverse drug reactions (ADRs) in older adults, with emphasis on risk factors and prevention strategies.	N/A	There was no explicit theoretical framework discussed in the article.	The findings of this study suggest that age-related factors such as polypharmacy and frailty contribute to the development of ADRs, and while medication review tools and software show some promise, the evidence remains inconsistent.	The authors implied that incorporating comprehensive geriatric assessments may help reduce the risk of adverse drug reactions (ADRs).	The strength of this study was its in-depth analysis of the geriatric population, polypharmacy, and how adverse effects manifest. A weakness was that, although it suggested integrating comprehensive geriatric assessments, it provided limited detail on what components should be included in the assessment.