Bölüm 6

Current Nursing Approaches in Pain Management

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Abstract

Pain is not limited to a physiological process; it is a multidimensional experience involving sensory, cognitive, and behavioral components, and it is a universal health problem that can negatively affect individuals' quality of life and functioning. Recent studies show that acute and chronic pain are common, especially in women and older age groups. The role of nurses in pain management encompasses accurate assessment, individualized care planning, and the effective use of pharmacological and non-pharmacological methods. Technology-based assessment methods, mobile health applications, wearable devices, and artificial intelligence-supported analysis systems enable objective monitoring of pain and enhance patient-centered care. Non-pharmacological methods support pain control through approaches such as music therapy, massage, aromatherapy, relaxation techniques, and virtual reality applications, while enhancing the effectiveness of pharmacological methods and reducing their side effects. Individualized pain management forms the basis of nursing care, taking into account the age, clinical condition, and psychosocial characteristics of patients, ensuring effective pain control, improved quality of life, and accelerated recovery.

1. Introduction

Pain is a fundamental health problem that has negative social, economic, and clinical consequences in all societies around the world (Henschke et al., 2015). Pain is more than just a physical phenomenon; it is a multidimensional experience involving physiological processes as well as sensory responses, cognitive assessments, mental state, and behavioral responses, all of which interact with each other (Mahna et al., 2020).

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The concept of pain, derived from the Latin root poena, meaning "punishment, torture, revenge," and historically passed into English via Middle French as "pain" (Duncan, 2017) The International Association for the Study of Pain (IASP) defines pain as "an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage." The explanatory notes accompanying this definition state that pain is always a personal experience, influenced by biological, social, and psychological components, distinct from nociception, observable beyond verbal expression, and learned through individuals' life experiences. Furthermore, it is emphasized that pain generally plays an adaptive role but can also negatively affect function and social/psychological well-being (Raja et al., 2020).

It is recognized as a significant public health issue globally. Epidemiological studies conducted among adults worldwide have found that one in five people suffer from pain and approximately one in ten adults are diagnosed with chronic pain. In the United States (US), the prevalence of chronic pain was presented in the 2023 National Center for Health Statistics (NCHS) report, which states that 24.3% of adults in the US experience chronic pain, while 8.5% experience high-impact chronic pain that severely limits their daily activities. Furthermore, the findings reveal that the prevalence of chronic pain is higher in older age groups and among women, and that there are differences based on socio-demographic factors (Lucas & Sohi, 2024). These results show that chronic pain not only reduces individual quality of life but also places a serious burden on healthcare systems. In Turkey, the most recent data on pain prevalence among adults has been presented in community-based studies conducted between 2021 and 2023. In a study conducted by Eti Aslan and Çınar (2023) in 28 provinces across seven geographical regions with a large sample size, it was found that 79.07% of participants had experienced pain in the past year and that the prevalence of pain was quite high at 80.84% (Aslan & Çınar, 2023). Similarly, a point prevalence study conducted at a university hospital in western Turkey found that the pain rate among hospitalized adults was over 60% (Özduran et al.).

Rapid advances in healthcare technology in recent years, the need to provide care tailored to patients' individual characteristics, and the increased use of complementary methods in clinical practice have brought about significant changes in pain management. In this sense, nurses play a crucial role in pain management. For successful pain management, nurses must correctly diagnose, monitor, and assess pain, apply the appropriate methods, and follow up on the effects of pain on individuals (Şimşek & Ecevit, 2020). The 2024–2026 classification published by the North American Nursing

Diagnosis Association International, Inc. (NANDA-I) states that the diagnoses of "chronic pain" and "acute pain" in the comfort domain are the direct responsibility of the nurse (Herdman et al., 2024). Furthermore, nurses' longer interactions with patients compared to other healthcare professionals entail many responsibilities, such as accurately diagnosing pain, learning about individuals' past pain experiences and coping methods, teaching new strategies, administering analgesics, and monitoring outcomes. The literature emphasizes that nurses are central to pain management in this process and are decisive in increasing the effectiveness of care (Alanizi et al., 2025; Kizza & Muliira, 2015).

Pain can be systematically controlled using pharmacological and non-pharmacological methods. Pharmacological applications include medication-based treatments such as patient-controlled analgesia, nonsteroidal anti-inflammatory drugs, opioids, and adjuvant agents, while non-pharmacological methods encompass non-drug treatments such as hot-cold application, hypnosis, massage, acupuncture, music therapy, etc. Current literature emphasizes that approaches combining multiple methods, complementary methods, and integrated pharmacotherapy are more effective in pain management (Niyonkuru et al., 2025; Shi & Wu, 2023; Soliman et al., 2025).

2. Current Practices and Nursing Interventions

2.1. Technology-Based Pain Assessment Methods

Accurate and detailed assessment of pain is considered an indispensable first step in successful pain management (Lucas & Sohi, 2024). In clinical practice, traditional pain assessment tools that have been in use for years, such as the Numerical Rating Scale, Visual Analog Scale, and Verbal Descriptive Scales, enable the structured measurement of patients' subjective experiences and serve as a central reference point in care processes (Butul, 2025). On the other hand, technological developments in health sciences in our era have brought new approaches to pain assessment and monitoring processes. Pain monitoring devices integrated with electronic health records, digital health applications, multimodal data collection methods, and telehealth-based assessment methods enable nurses and other healthcare professionals to monitor pain more objectively, continuously, and holistically (El-Tallawy et al., 2024; Hadjiat & Arendt-Nielsen, 2023). These innovations not only increase the accuracy of measurement but also allow for a comprehensive assessment of patients' past pain experiences, coping methods, and treatment responses (Dowell et al., 2016; Hadjiat & Arendt-Nielsen, 2023;

Riffin et al., 2019). Therefore, while traditional scales maintain their clinical validity, the incorporation of technology-based innovations into the system has transformed pain assessment and management processes into a more detailed, reliable, and personalized care framework.

2.1.1. Artificial Intelligence-Supported Pain Analysis Systems

Artificial intelligence-supported pain analysis systems are considered an innovative approach that stands out for their capacity to produce reliable data in clinical applications and their objective measurements. In the section "Research in Automatic Pain Assessment" in Marco Cascella's book Exploring AI in Pain Research and Management, it is stated that pain levels can be determined more consistently by processing biosignals such as EEG and EMG, as well as behavioral indicators such as voice intonations, facial expressions, and motor movements using machine learning algorithms. It is also noted that these systems can play a vital role, especially in anesthesia and intensive care environments where patients are unable to communicate (Cascella, 2024). Similarly, Zarif Bin Akhtar's study titled Exploring AI for Pain Research Management: A Deep Dive Investigative Exploration emphasizes that integrating biosignals and electronic health records with artificial intelligence algorithms enables evidence-based and rapid clinical decision-making. emphasizing that these systems increase efficiency by reducing the workload of clinicians and contribute to strengthening patient-centered care (Akhtar, 2025). Furthermore, in their review article titled Applications of Artificial Intelligence in Pain Medicine, Alaa Abd-Elsayed and colleagues state that artificial intelligence is an important tool in diagnostic processes, predicting pain progression, and estimating treatment responses, but due to the limited nature of current studies, new research is needed, particularly in areas such as nerve stimulation optimization and treatment response prediction (Abd-Elsayed et al., 2024).

2.1.2. Pain Monitoring with Wearable Devices

Intense and long-term pain management requires the combined use of different analgesic methods and advanced technologies (Erden & Tura, 2025). Wearable devices play an important role in chronic pain management in terms of monitoring symptoms and predicting pain progression (Ayena et al., 2025). Sensors in wearable technologies such as smart watches, electromyographic belts, and piezoelectric devices enable the objective assessment of pain levels by monitoring patients' heart rate, skin conductance, movement, and physiological parameters in real time (Erden & Tura, 2025; Erdoğan, 2020). The literature indicates that multi-level models and

Random Forest show consistent performance, but advanced algorithms face limitations due to computational load and data quality. Multi-level models have not yet been sufficiently utilized for data integration and represent an important area for development that could improve prediction accuracy (Ayena et al., 2025). Wearable and modular devices support subjective pain assessments in patients with chronic pain and enable the monitoring of objective functional criteria. This allows for more comprehensive pain management by enabling real-time monitoring of physiological parameters, daily activity, mobility, and sleep patterns (Chang et al., 2025).

The use of wearable devices such as Fitbit in cases of chronic pain and opioid use disorder enables the analysis of sleep, activity, and stress data alongside patient self-reports, allowing for the prediction of sudden pain spikes and the implementation of personalized interventions, thereby improving treatment adherence. While large language models have limitations in generating clinical insights, machine learning models have been highlighted for their high accuracy in these predictions (Goyal et al., 2025). In addition to all this, AI-supported measurement tools and virtual reality applications also strengthen multidisciplinary approaches in pain management (Erden & Tura, 2025).

2.1.3. Mobile Health (mHealth) Applications

Mobile health (mHealth) technologies have undergone significant changes over the past 25 years. Initially, mobile solutions in healthcare often began with SMS-based messaging systems, used as an accessible and low-cost tool for appointment reminders and chronic disease management. With the widespread use of smartphones, wearable devices and mobile applications have gained comprehensive functions such as personal coaching, health monitoring, and remote monitoring, making it possible for users to monitor and manage their health data in real time. Simultaneously, social media platforms have also become an effective channel for health communication, offering the opportunity to reach large communities at low cost and to build communities (Portz et al., 2024). In the following period, during the COVID-19 pandemic, the use of mHealth applications increased worldwide and was adopted as a practical way for individuals to access health services. A study conducted among university students in Turkey found that 60.3% of participants were aware of mHealth applications, but only 24.1% actively used them (Erol et al., 2025). In addition, the increasing number of applications has raised new issues in terms of quality and safety. The study by Mescher et al. (2025) emphasized that the frameworks and scales examined generally evaluated dimensions such as content quality, usability, accessibility,

and effectiveness, but were limited in important areas such as security, data privacy, and clinical effectiveness. Therefore, it is recommended that healthcare professionals conduct a comprehensive evaluation before using applications in clinical settings, particularly considering cultural adaptation and ease of access for international users (Mescher et al., 2025). In this context, Akgün and Soygüder (2025) developed a hybrid decision-making framework. Criterion importance levels were determined using the Fuzzy Best-Worst Method (BWM), and then the Weighted Heronian Mean (WHM) was used to consider the interaction between criteria. This approach enabled a comprehensive evaluation of the usability, content accuracy, accessibility, data security, and clinical performance dimensions of mHealth applications used in diabetes management. The study's findings produced more reliable and balanced results compared to traditional methods and, moreover, provided a functional tool that can be used by healthcare professionals and policymakers in application selection and recommendations (Akgün & Soygüder, 2025).

In the post-pandemic era, the future of mHealth technologies is shaping up around more interactive, personalized, and sustainable solutions. SMS-based systems are gradually being replaced by advanced AI-powered chatbots, while wearable devices and mobile applications offer more comprehensive health management through sensor usage and new form factors (Hong, 2024). Concepts such as "wearable deviceization of smartphones" and "smartphonization of wearables" are introducing a new approach in digital medicine by transcending the functional limitations of devices (Hong, 2024). In the future, mHealth is expected to evolve into a structure that increases user participation, strengthens global health inclusivity, and is supported by sustainable business models. However, managing risks such as data security, misinformation, and inequalities is of great importance. In this context, mHealth technologies can only bring about lasting transformation in healthcare through technological innovation, as well as cultural, political, and organizational alignment (Portz et al., 2024).

2.2. Innovative Approaches in Non-Pharmacological Interventions

After pain assessment, pain management must be performed using various intervention techniques (Smith et al., 2016). Effective pain management is an important issue in nursing care in terms of preventing the development of pain in cases of pain that do not respond to treatment, reducing the risk of complications associated with pain, and promoting healing (Kozier, 2008). For this purpose, pharmacological methods are generally preferred due to their rapid effect and ease of application (Gündüz

& Çalışkan, 2018). However, the unconscious use of analgesics has negative effects, such as the financial burden it places on individuals and the country's economy, causing adverse changes in physiological processes, and, especially in the case of narcotic analgesics, the development of tolerance due to the need for increasing doses (Özveren & Uçar, 2009). Another important method used in pain management is non-pharmacological methods. Non-pharmacological methods, which complement pharmacological applications in pain management, are effective approaches that aim to strengthen pain control by reducing the need for analgesics. These methods, which are easy for patients to understand and apply, do not create additional financial burdens, and do not cause unwanted effects, reduce pain perception and consequently anxiety due to the sense of relief and control they provide, thus significantly improving quality of life and functionality (Christiaens, 2003; Dinçer, 2010; Potter et al., 2025). When used with analgesics, they enhance drug efficacy, enabling adequate analgesia to be achieved with lower doses and preventing adverse effects associated with drug use (Ghezeljeh et al., 2017; Sakallı & Kara, 2022). The ability to apply them whenever needed, the fact that their effects can be observed in a very short time, and the fact that nurses can use them as an independent intervention make non-pharmacological pain management a comprehensive intervention approach (Christiaens, 2003). Non-pharmacological methods include massage, applying pressure to specific areas of the body, arranging the environment to provide comfort, stress management training, visualization techniques, music therapy, distraction, relaxation techniques, hot and cold applications to the skin, deep breathing and coughing exercises, therapeutic touch, and transcutaneous electrical nerve stimulation (TENS). Therapeutic touch can be applied at the nurse's discretion or in conjunction with the physician, while TENS is applied only by the nurse or in conjunction with the physician, in accordance with the physician's decision (Köse & Karkucak, 2015; Kwekkeboom & Gretarsdottir, 2006; Potter et al., 2025; Pujol & Monti, 2007). Along with these, innovative non-pharmacological methods in contemporary nursing interventions stand out as complementary approaches that increase effectiveness in patient care. These methods include gamification (Kumar et al., 2025), digital health and telehealth applications (Cardozo-Batista et al., 2025), mindfulness-based digital solutions (Wei et al., 2024), the conscious structuring of the placebo effect (Checa-Peñalver et al., 2024), and techniques targeting neurobiological processes (Y. Wang et al., 2025).

2.2.1. Virtual Reality (VR) Applications

In nursing care, virtual reality (VR) applications are gaining importance among technology-based non-pharmacological interventions. The significant advantages of VR mentioned in the literature include alleviating agitation and anxiety, reducing apathy and depressive symptoms, and effectively controlling aggression (L.-C. Wang et al., 2025). Realistic experiences provided through visual and auditory stimuli have been shown to increase patient comfort by diverting attention away from other stimuli, preventing individuals from focusing on pain and negative symptoms, and promoting psychological relaxation and calmness (Bazaliński et al., 2025; Çapın, 2024). The high acceptability and minimal side effects of VR, which is easy to implement, enable its safe application in clinical settings. Furthermore, VR is attracting attention as an innovative and successful method in modern nursing practice due to its ability to reduce dependence on pharmacological analgesics, increase motivation during the recovery phase, and make the active role of nurses visible in the multidisciplinary care process. Its customizable structure enables the creation of environments tailored to users' needs, enhancing safety and comfort and facilitating adaptation to care processes (Pardini et al., 2023).

2.2.2. Relaxation Techniques and Mindfulness

Within nursing care, relaxation techniques are of great importance as a beneficial non-pharmacological intervention in the management of various physical and mental health issues. These techniques offer various benefits, such as reducing pain, fatigue, anxiety, and sleep problems, decreasing muscle tension, and balancing the physiological effects of stress. In addition, they are among the independent nursing interventions prioritized in clinical settings due to their practicality, low cost, and lack of side effects (Çapık et al., 2016; Çiftçi & Ceyhan, 2024). Evidence-based clinical practices show that relaxation techniques lower cortisol (stress hormone) levels, improve breathing rhythm and heart rate, reduce muscle tension, and alleviate the somatic and emotional effects of stress (Norelli et al., 2018). Methods such as progressive relaxation exercises and guided visualization are reported to be effective in managing anxiety, stress, fatigue, and sleep problems, as well as reducing pain perception and thereby improving quality of life (Kubilay & Ergüney, 2020). These techniques also make significant contributions to anger management, reducing aggression and anger symptoms while increasing calm behavior and helping individuals develop more positive responses (Demir & Okanlı, 2013).

Mindfulness-based interventions, another non-pharmacological method widely used in nursing care, also produce effective results in reducing anxiety, depression, and stress levels, and in increasing self-compassion, mindful awareness, psychological well-being, and quality of life (Bilgiç & Gurkan, 2021; Dağlar & Şahin, 2021). Systematic reviews show that mindfulness practices reduce negative emotional responses while supporting positive psychological outcomes, and that structured programs and qualified instructors are of great importance for the continuity of effectiveness (Iikura et al., 2025). All these findings indicate that relaxation techniques and mindfulness-based interventions are effective non-pharmacological methods that provide safe, feasible, and comprehensive benefits in nursing care.

2.2.3. Aromatherapy and Music Therapy

Aromatherapy and music therapy, which are interventions used in nursing care, stand out as important complementary methods of the holistic approach. Aromatherapy involves the therapeutic use of essential oils derived from plants and has proven effective in reducing pain, stress, anxiety, and sleep problems. The application of oils such as rose, lavender, and rosemary through massage, inhalation, or bathing supports the healing process, increases patient comfort, and facilitates human-environment interaction (Bilgiç, 2017). Research results examining randomized controlled postgraduate studies conducted in Turkey, which support these findings, have determined that the use of lavender oil, particularly through inhalation and massage, is effective in alleviating pain, fatigue, anxiety, and sleep problems. It has also been found to contribute to the alleviation of nausea and vomiting, a common symptom associated with chemotherapy, and to increase patient satisfaction. The widespread preference for lavender is associated with its safe usage characteristics and calming effects (Kurtgöz & Kızıltepe, 2022). Evidence on the clinical effects of aromatherapy shows similar results in both pediatric and adult patients. In the context of burn treatment, it has been found that lavender oil inhalation during dressing changes significantly reduced pain levels, respiratory rate, heart rate, and mean arterial pressure in children, and that this effect contributed to pain control and physiological balance (Akgül et al., 2021). Another study examining the inhalation use of lavender and bergamot oils in surgical intensive care patients found that applications over two nights resulted in improved sleep quality and a significant reduction in anxiety levels, while no such positive effects were observed in the control group (Toprak et al., 2024). Furthermore, aromatherapy massage was found to be effective in managing constipation in elderly individuals. After massage applied once a

day for three weeks, a decrease in difficulty and incomplete emptying, and an increase in stool volume and frequency were observed, indicating that bowel movements were supported (Lafcı & Kaşikçi, 2023). All these findings show that aromatherapy is a method that positively affects physiological and psychological outcomes, in addition to being adaptable to various clinical settings. For this reason, it is recommended that nurses have knowledge of appropriate oil selection, correct application approach, and dosage, and that aromatherapy be added to the education curriculum and in-service training programs (Bilgiç, 2017).

Another non-pharmacological application frequently used in nursing care in recent years is music therapy. This method stands out as a side-effect-free and easy-to-apply method. Music is effective in managing anxiety, pain, stress, and sleep problems, improving the quality of care, enhancing patient comfort, and facilitating communication (Bayraktar & Yetimoğlu, 2019). Supporting these findings, a study conducted on patients receiving mechanical ventilation support observed that music therapy reduced pain and anxiety levels and created positive changes in vital signs such as respiratory rate and heart rate. Therefore, music therapy in the intensive care setting is described as a holistic intervention that provides psychological relief and supports physiological balance (Eraydın et al., 2020). Classical and meditative music provide the greatest benefit, while fast-paced music genres should be avoided. Nurses can organize 20-30 minute music sessions for patients at specific intervals throughout the day through short training programs. These initiatives are positively received by patients and their families, improve the quality of care, and support a holistic approach in clinical settings (Borzoo et al., 2025).

Furthermore, studies show that aromatherapy and music therapy also have effective results in non-clinical settings. In one such study aimed at reducing pre-exam anxiety in nursing students, the inhalation of lavender and rose essential oils combined with listening to Beethoven's Moonlight Sonata resulted in a significant decrease in students' systolic and diastolic blood pressure and pulse rates. The significant decrease in systolic pressure after the intervention and the prevention of stress-induced increases in pulse and diastolic pressure were considered noteworthy (Borzoo et al., 2025).

2.3. Individualized Pain Management

Individualized pain management is considered one of the fundamental elements of nursing care. Since pain is an individual experience, care plans tailored to each patient must be developed (Karabey & Özveren, 2025).

This perspective contributes to the integration of pharmacological and non-pharmacological methods by taking into account the patient's physical, psychological, and social characteristics. Multi-component analgesia strategies are of great importance in minimizing opioid use and preventing side effects. Including non-pharmacological methods (such as hot/cold application, positioning, massage, and circulation enhancement) in care plans increases the effectiveness of patient-centered practices performed by nurses (Macintyre & Schug, 2021; Xu et al., 2025).

A study examining the knowledge and practice levels of intensive care nurses on this subject found that pain assessment scales were widely preferred, but the preference rate for behavioral scales was low. The fact that nurses who received training had significantly higher knowledge and practice scores demonstrates the importance of continuous professional education in individualized pain management. In this context, the fact that nurses often use non-pharmacological methods "when necessary" indicates that practices are not standardized. This situation necessitates the development of clinical guidelines and increased use of behavioral scales (Kara Çamlı & Çeçen, 2025).

Individualized care contributes to the effective control of pain and also supports the acceleration of the recovery process. Nurses organize care plans by considering individual differences such as age, clinical condition, psychological characteristics, and social environment. Regular pain assessment and patient-centered practices play a decisive role in this process (Hyland et al., 2022; Oğuz Erdem & Yümnü, 2024). Developing individualized care plans, especially for older adults, patients with opioid tolerance, a history of addiction, or a diagnosis of organ failure, supports safe and effective pain management in nursing. This approach increases patient safety and reduces the risk of complications (Macintyre & Schug, 2021).

Individualized pain management reflects a safe, evidence-based, and holistic approach to nursing care. When nurses integrate pharmacological and non-pharmacological methods, use regular pain assessment tools, and develop patient-centered strategies, effective pain control, improved quality of life, and accelerated recovery are achieved (Hyland et al., 2022; Kara Çamlı & Çeçen, 2025; Karabey & Özveren, 2025; Macintyre & Schug, 2021; Oğuz Erdem & Yümnü, 2024; Xu et al., 2025).

3. The Role and Responsibilities of Nurses in Pain Management

Pain management is one of the fundamental areas of professional nursing care, bringing together the ethical, clinical, and educational responsibilities

of nurses within a holistic framework. Nurses play a decisive role throughout the entire process, from the diagnosis of pain to the implementation of the treatment plan, from defending patient rights to intra-team coordination. Therefore, all professional elements of the nurse, such as knowledge, skills, effectiveness, assessment competence, and professional attitudes, must be used in a coordinated manner in pain management (Oğuz Erdem & Yümnü, 2024). One of the fundamental responsibilities of the nurse is the accurate, safe/valid, systematic, and multidimensional assessment of pain. This assessment process requires not only the collection of subjective pain reports but also the comprehensive consideration of physiological findings, behavioral indicators, and psychosocial-environmental factors that shape the individual's pain experience. The nurse's self-efficacy is a variable that directly affects the quality of pain management skills. The selection of appropriate assessment tools/scales, regular/accurate record keeping, and the adaptation of collected data to the clinical decision-making process are among the professional responsibilities of nurses (Çakır & Çakır; Karabey & Özveren, 2025). Nurses stand out not only as practitioners in the management of acute and chronic pain but also in their advocacy role. The selection, implementation, and observation of the results of contemporary evidence-based pharmacological and non-pharmacological interventions reflect the nurse's active role in the care process. In addition, informing the patient and their family about pain, treatment options, side effects, and treatment compliance is part of the nurse's educational responsibilities, which is one of their independent contemporary roles. This approach ensures that the patient actively participates in their own treatment and care processes, thereby strengthening the individual-centered care approach (Aydın & Turan, 2019). Furthermore, the nurse's responsibilities in pain management extend beyond the clinical setting to include advocating for equality in healthcare services in general. Service access issues in rural areas encourage nurses to actively participate in community-based initiatives and policy development processes. In this context, nurses contribute to ensuring equality and justice in healthcare by taking on advocacy and coordination roles that guarantee equal access to pain care for disadvantaged groups. All of these responsibilities contribute to nursing initiatives transforming into a safe and effective care process that supports the patient's well-being (Knisely et al., 2025; Tura & Erden, 2021). Nurses are in a decisive position within the multidisciplinary team in terms of the success of pain management. According to the findings of Brown and Richardson's study, nurses stand out as team members who support treatment/care diversity by giving a higher level of approval to methods such as psychological support, relaxation techniques, and flexibility

in treatment approaches. This demonstrates that nurses are not only care providers but also professionals who guide internal team decision-making processes (Brown & Richardson, 2006). Since pain management is directly related to health policies in terms of its process and outcomes, the nurse's role in this area extends beyond clinical practice to include policy advocacy. Areas such as educational regulations, the ethical framework of alternative treatments, opioid use, protocols for addiction risk, and the development of appropriate assessment tools, particularly for neurodegenerative diseases, are strengthened by the contributions of nurses. Therefore, nurses are defined not only as clinical care providers in pain management but also as active stakeholders in policy processes (Monroe, 2021).

In general, the fundamental roles and responsibilities of nurses in pain management are:

- Conducting detailed and systematic pain assessment,
- Ensuring coordination and collaboration with the multidisciplinary team,
- Adopting evidence-based practices and integrating them into the care plan,
- Providing personalized care by considering patient experiences and individual preferences,
- Selecting appropriate pharmacological and non-pharmacological pain control methods,
- Incorporating innovative technologies (e.g., digital tools, virtual reality, observation scales) into the care process,
- Monitoring the effectiveness of practices and keeping regular records,
- Identifying potential complications early and taking necessary precautions,
- Educate the patient and their family about pain management, the treatment process, and side effects,
- Advocating for patient rights and ensuring continuity of care while adhering to ethical principles (Bernier et al., 2024; Braun et al., 2025; Næss et al., 2025; Vitor et al., 2025; Yang et al., 2025).

4. Conclusion

Pain management is a process at the core of nursing care that requires collaboration across multiple disciplines. Recent publications indicate that nurses have taken on significant responsibilities in applying both pharmacological and non-pharmacological methods, conducting comprehensive and systematic pain assessments, maintaining regular records, and educating patients and their families. The integration of digital and innovative technologies (e.g., digital observation tools, virtual reality) into the healthcare system, the adoption of complementary methods and individualized multi-method care practices, and the inclusion of evidence-based practices in the process are emerging as key elements that transform nursing interventions and increase the effectiveness of care. This change requires nurses to have up-to-date knowledge, a high level of clinical decision-making, and effective communication skills. In this context, nurses play a central role in ensuring patient safety and supporting continuity of care by detecting complications early. These findings demonstrate that nurses' professional responsibilities in pain management are ethical, comprehensive, and dynamic, and that their role goes beyond that of mere practitioners to a position that guides care processes and enhances patient safety and quality of care.

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