

Review Article

Nurses' Knowledge, Perceived Barriers and Practices Regarding Cancer Pain Management: A Scoping Review

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ABSTRACT

Nursing care plays a crucial role in the management of cancer pain, but nurses often face challenges due to inadequate knowledge, negative attitudes towards opioid use, and suboptimal pain evaluation practices. This scoping review aims to examine nurses' level of knowledge and practices in cancer pain management and identify the barriers they encounter when caring for patients with cancer. A comprehensive search of 50 articles was conducted using multiple databases such as Web of Science, PubMed, Ovid MEDLINE, Embase Classic + EMBASE (Ovid), The Cochrane Library (Wiley), and CINAHL. English-language scholarly publications from various countries with peer-reviewed content searched from 2018 to 2023, resulting in the identification of 25 articles for full text evaluation. After excluding five articles that did not meet the inclusion criteria, 20 articles were analyzed in detail. Three primary themes emerged regarding nurses' knowledge and practices in cancer pain. The findings underscore the need for enhanced education initiatives and a multidisciplinary approach to improve nurses' competency in managing cancer pain. By expanding their understanding and expertise in pain management, oncology nurses can greatly contribute to improving the well-being of cancer patients. It is crucial to address the identified barriers through educational interventions, enabling nurses to provide optimal pain control and high-quality care. Let's empower nurses to conquer cancer pain with knowledge, compassion, and unwavering dedication! Together, we can make a positive difference in the lives of cancer patients.

Keywords: Nurses, Oncology, Knowledge, Practices, Barriers, Pain management

INTRODUCTION

With populations that are increasingly aging, the incidence of cancer continues to rise each year. The biggest cause of mortality globally is now cancer. By 2030, the cancer burden in Sub-Saharan Africa is expected to rise by more than 85%, on a scale of 1–3.^[1] As a result of significant advancements in cancer treatment, survival rates have increased. However, these advancements have also led to more patients suffering from cancer pain, either as a result of their therapy or the illness itself.^[2] Effective management of cancer pain is imperative for patients to experience an improvement in their quality of life.^[2] Research studies have shown that despite progress made in the treatment of cancer and the management of cancer-related pain, many cancer patients still experience substantial amounts of pain worldwide.^[3] Nurses, as patient advocates, play a crucial role in accurately evaluating and managing their patients' pain. However, research has revealed that nurses often lack information about pain management and hold negative attitudes towards it.^[4]

In general, 30–50% of cancer patients undergoing treatment report some level of pain, while 70–90% of cancer patients in late stages report moderate to severe pain.^[5] Various factors contribute to the alarmingly high rate of pain experienced by cancer patients, including inadequate patient education, limited treatment choices, advanced stages of cancer and lack of knowledge or empathy among healthcare staff.^[1]

The unsatisfactory pain management quality was ascribed to the under-dosage of drugs, improper intake timing and hesitation against utilising a powerful opioid.^[6] Patient outcomes, such as duration of hospital stay and speed of recovery, are negatively impacted by inadequate pain evaluation and management.^[3]

Barriers to effective pain management among nurses working with cancer patients include inadequate training and education, poor teamwork, heavy workload, limited nurse-patient communication and lack of available time.^[7] Addressing these barriers through comprehensive training programs can improve nurses' knowledge and attitudes towards pain management, ultimately leading to more effective pain control for cancer patients.^[7]

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In conclusion, the rising incidence of cancer and the advancements in cancer treatment have led to an increased prevalence of cancer pain. However, many cancer patients still experience inadequate pain management. Nurses play a crucial role in addressing this issue, but they often lack the necessary knowledge and training. Addressing barriers and improving pain management education for nurses is essential for enhancing the quality of life for cancer patients.

PICOT QUESTION

In nurses working with cancer patients, what is the level of their knowledge and practices of pain management as well as barriers they face while providing care to these patients?

METHODS

The present research is a scoping review that provides an overview of the progressive strategy that has been developed. This methodology consisted of the following six stages, all of which were derived from Arksey and O'Malley's (2005) framework: determining the research question; identifying the studies that are pertinent to the question; choosing the study to conduct; documenting the data; accumulating, summarising and publishing the findings; and conferring with the relevant stakeholders.^[8]

Search strategy

The search strategy was devised in a four-step process to comprehensively identify relevant literature from 2018 to 2023. Initial preliminary searches were conducted on multiple databases including the Web of Science, Google scholars, PubMed, Ovid MEDLINE, Embase Classic + EMBASE (Ovid), (Thomson Reuters), the Cochrane Library (Wiley) and CINAHL. We looked through English-language issues of scholarly publications all over the globe that included peer evaluations. In addition, a Google search was performed. In addition, a hand search, a search of the reference lists of the articles that were included, and a search of the pertinent names of the authors were all done to locate further relevant articles. Duplicate publications were removed, and titles and abstracts were independently screened by two authors according to predefined inclusion and exclusion criteria. Reference lists of included studies were reviewed for additional relevant literature. Google Scholar was utilised to identify articles citing the selected studies and recent publications. Search terms such as 'Nurses', 'oncology', 'knowledge', 'practices', 'challenges', 'factors', 'cancer pain', 'oncology patients', 'cancer pain management', 'nurses', 'knowledge', 'perceived barriers' and 'nursing practices' were employed in various combinations to ensure a thorough search [Figure 1].^[9]

Inclusion criteria for selected articles

All studies published in a national, international and peer-reviewed publications were considered for this study. The studies included focused specifically on cancer patients and were performed in clinical practice environments. Included

were both quantitative and qualitative studies as well as those that were descriptive or cross-sectional [Supplementary data].

Quality evaluation of the selected articles

Extraction of data was carried out on an individual basis by the researchers. Tabulation was then performed on the data that had been retrieved in conjunction with the narratives to present an overview of the findings that had been acquired and to clarify the interpretive procedure. The quality of each of the analysed studies was determined using the rating method developed by Hawker *et al.* (2002).^[10] Each study was evaluated for its components, such as its abstract, introduction, methods (sampling, data analysis, ethical considerations, etc.), results and implications. A score of 5 was given for each component; thus, the total score was 45 (5 × 9 components). A score higher than 40 was considered good [Table 1].^[11-27]

SEARCH RESULTS

Description of selected studies

Nurses' knowledge about cancer pain management

Research studies have indicated varying levels of knowledge among nurses regarding cancer pain management. Toba *et al.* found that the average knowledge score among nurses was 5.1 on a scale of 0–10, reflecting a significant knowledge gap.^[6] However, Yu *et al.* (2022) reported that approximately 85% of respondents claimed to have a comprehensive understanding of the three-step painkiller ladder recommended by the World Health Organization for cancer pain management.^[11] In a

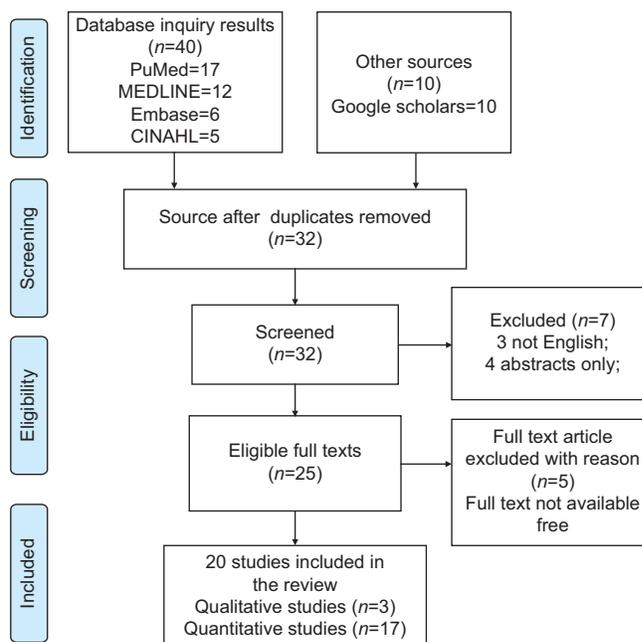


Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Flow Diagram of Included Studies, adopted from (Moher *et al.*, 2009).

Table 1: Evaluation of studies' quality scoring system tool developed by Hawker *et al.* (2002).

Author/s	Author/s	Abstract	Introduction	Instrument	Sampling	Data	Ethics	Results	Implications	Total score	Rating
	and title	and aim				Analysis				(50)	
Admass <i>et al.</i> (2020) ^[11]	5	5	5	5	4	5	5	4	5	43	Good
Li <i>et al.</i> (2021) ^[2]	5	4	5	5	4	5	5	5	5	43	Good
Toba <i>et al.</i> (2019) ^[6]	5	5	5	5	4	5	4	5	5	43	Good
Yu <i>et al.</i> (2022) ^[111]	5	5	4	4	5	5	5	4	4	41	Good
Al-Sayaghi <i>et al.</i> (2022) ^[12]	4	5	5	4	5	4	5	5	5	42	Good
Othman and Al-Atiyyat (2022) ^[13]	4	5	4	5	4	5	4	5	5	41	Good
Darawad <i>et al.</i> (2019) ^[14]	4	5	5	5	5	5	5	5	4	43	Good
Imeraj <i>et al.</i> (2022) ^[15]	5	4	5	5	4	4	4	5	5	41	Good
Yu <i>et al.</i> (2021) ^[16]	4	5	5	4	5	4	5	5	5	42	Good
Samarkandi (2018) ^[17]	5	4	5	4	5	5	4	4	5	41	Good
Omer and Nematala (2022) ^[18]	5	4	5	4	5	4	5	4	5	41	Good
Tufail (2017) ^[19]	4	5	4	5	4	5	5	5	5	42	Good
Omotosho <i>et al.</i> (2023) ^[20]	5	4	5	5	5	4	5	5	5	43	Good
Yassin <i>et al.</i> (2020) ^[21]	5	5	5	4	5	5	5	5	5	44	Good
El-Aqoul <i>et al.</i> (2020) ^[22]	5	4	5	5	5	5	4	5	5	43	Good
Palassari <i>et al.</i> (2018) ^[23]	5	4	4	5	5	5	5	5	5	43	Good
Orujlu <i>et al.</i> (2022) ^[24]	5	4	5	5	5	5	5	4	5	43	Good
Rafii <i>et al.</i> (2021) ^[25]	5	4	4	4	5	5	5	5	5	42	Good
Onsongo <i>et al.</i> (2020) ^[26]	5	4	5	5	4	5	4	5	5	42	Good
Liu <i>et al.</i> (2021) ^[27]	5	4	4	4	5	5	5	5	5	42	Good

separate study, Li *et al.* (2021) observed an average knowledge score of 21.56 among nurses, which surpassed the passing level.^[2] Conversely, AL-Sayaghi *et al.* highlighted low levels of understanding among nurses working in Saudi, with scores ranging from 17.7% to 100% and a mean score of 45.29%.^[12]

Studies conducted in specific countries have shed light on knowledge gaps in cancer pain management among nurses. Othman and Al-Atiyyat (2022) found that nurses working in Jordan had an average knowledge score of 6.48, indicating limited knowledge in this area.^[13] The study also identified significant knowledge gaps related to opioid rescue dosage and the fastest route of action for opioids.^[13] In Jordan, doctors demonstrated better knowledge and attitudes towards pain management compared to nurses, with doctors having a stronger understanding of 'opioid addiction' and nurses having better grasp of 'combined analgesics'.^[14] Similarly, in Ethiopia, Admass *et al.* (2020) reported that only 7.2% of nurses working in oncology scored at or above the cutoff for competent understanding in cancer pain management, with an average score of 20.4 out of 40.^[11]

Various barriers contribute to inadequate pain management among nurses. These include inadequate training and education, poor teamwork, heavy workloads, limited nurse-patient communication and lack of available time.^[7] Furthermore, Liyew *et al.* (2020) identified under-dosage of drugs, improper intake timing and reluctance to use powerful opioids as factors impacting the quality of pain management.^[3]

Nurses' practices about cancer pain management

According to Toba *et al.*, nurses demonstrated effective pain documentation practices, with more than half of

them assessing patients' pain after each round.^[6] They also emphasised the importance of evaluating all aspects of pain, with intensity being the primary focus. Similarly, Yu *et al.* (2022) found that over half of the medical staff were knowledgeable about guidelines for the treatment of cancer pain, and they reported conducting daily assessments of pain in cancer patients.^[11]

In Jordan, a study revealed that nurses frequently checked on patients' pain levels during shift changes and prioritised thorough pain evaluation. Furthermore, a significant number of nurses (81.7%) documented pain evaluations.^[13] Similarly, in Albania, the majority of nurses (71.4%) opted for opioid analgesic medication for the appropriate management of pain in cancer patients, while a smaller percentage (28.6%) selected non-opioid analgesics.^[15]

Overall, these findings suggest that nurses are engaged in assessing and documenting cancer patients' pain, and they demonstrate knowledge and adherence to pain management guidelines. However, it is important to explore further research to identify any potential gaps or areas for improvement in their practice.

Barriers for cancer pain management

Barriers to cancer pain management are multi-faceted and can be attributed to several factors. One of the main obstacles identified is poor pain evaluation, with healthcare professionals often failing to accurately assess and document patients' pain levels.^[6] Lack of knowledge about pain management among healthcare providers, particularly nurses, is another common barrier that hinders effective pain control.^[6]

Strict regulations surrounding the use of opioids in healthcare systems also pose challenges for cancer pain management. These regulations can make it difficult for healthcare providers to adequately prescribe and administer opioids, leading to suboptimal pain relief for patients.^[6] In addition, the lack of a multidisciplinary approach and individualised analgesia protocols further contribute to the barriers faced in pain management.^[11]

In certain regions, such as Jordan, the scarcity of trained healthcare professionals and limited availability of personnel pose significant barriers to cancer pain management.^[13] Patients' reluctance to disclose their pain or refusal to use opioids due to concerns or misconceptions also present challenges in effectively managing cancer-related pain.^[14]

Overall, addressing these barriers requires improving healthcare providers' knowledge and understanding of pain management, implementing comprehensive and individualised protocols, enhancing communication between patients and healthcare teams and advocating for policies that support effective pain control in cancer patients.

Factors affecting knowledge and practices of nurses about proper management of pain in patients with cancer

Several factors have been identified as significant contributors to nurses' knowledge and practices regarding the proper management of pain in cancer patients. Gender was found to be a differentiating factor in knowledge scores, with male nurses demonstrating a higher median score compared to female nurses (Toba *et al.*, 2019).^[6] In addition, nurses' understanding of cancer pain management was influenced by variables such as level of education, practice area, years of experience in oncology, profession and job title (Yu *et al.*, 2022).^[11]

Other factors that were found to impact nurses' knowledge of cancer pain management include age, educational background, clinical rank, clinical experience, experience in providing cancer care and specific training in cancer pain management (Li *et al.*, 2021; Yu *et al.*, 2021).^[2,16] Nurses who had received training specifically related to cancer pain and were exposed to a higher number of cancer patients demonstrated greater knowledge in this area (Yu *et al.*, 2021).^[16]

In Saudi Arabia, it was observed that nurses exhibited a significant knowledge deficit in assessing and treating cancer pain, with higher scores reported in the outpatient section compared to the emergency room and acute units (Al-Sayaghi *et al.*, 2022).^[12] Similarly, nurses in Jordan showed varied knowledge levels based on hospital type, years of nursing experience, years in the clinical environment and participant ages (Othman and Al-Atiyyat, 2022).^[13]

Furthermore, Ethiopian research highlighted that factors such as level of education, gender and previous training in pain management were associated with nurses' knowledge and attitudes towards effective pain management in cancer patients.^[14]

Overall, these factors play a crucial role in shaping nurses' understanding and practices in the management of cancer pain. Addressing these factors through targeted education and training programs can be instrumental in enhancing nurses' knowledge and improving the quality of care for cancer patients experiencing pain.

DISCUSSION

In a recent review, it was found that nurses working in oncology units have varying levels of knowledge about cancer pain management. They may lack understanding in areas such as morphine emergency dosage computation, opioid risk of addiction, opioid-induced breathing restriction, the opioid roof effect and alternative pain management methods. However, the involvement of nurses in assessing and managing pain is crucial because they often observe a patient's pain and can bridge the gap between physicians and patients. This supports previous research that has also highlighted gaps in knowledge related to pain physiology, pharmacology and opioid use.^[14]

The ability of medical professionals to effectively manage pain in cancer patients is greatly influenced by factors such as their training, experience in oncology and educational levels. A comprehensive understanding of cancer-related pain, including pain assessment, narcotic use and potential adverse reactions are crucial for successful pain treatment. In addition, sociodemographic factors also play a role in nurses' understanding and implementation of pain control strategies for cancer patients. Studies have demonstrated that education and experience working in a cancer ward positively correlate with knowledge of cancer pain management. Practical, hands-on experience can further enhance nurses' expertise in pain control.^[14,17,28]

Limitations

The limitation of this review is that it focuses specifically on nurses working in oncology units and their knowledge about cancer pain management. This may not be representative of nurses in other specialties or healthcare settings. In addition, the review only highlights gaps in knowledge and does not provide specific recommendations or strategies for improving education and training in cancer pain management for nurses. Further research is needed to explore these areas and develop comprehensive interventions to address the identified knowledge gaps among nurses.

CONCLUSION

According to the scoping review, it is clear that nurses in oncology units could use some extra education and training when it comes to managing cancer pain. In particular, they need to learn about total pain management, which combines both medicine and other methods, as well as psychological strategies that can be personalised for each patient. In addition, nurses appear to have less information about the

pharmacology and physiology of pain, as well as limited experience in opioid administration and managing physical dependency. This may be attributed to a lack of education on pharmaceutical pain management.

The degree of information that nurses have about efficient cancer pain management ranges from low to good. On the other hand, nurses generally adhere to excellent pain documentation practices. Substantial gaps in understanding existed regarding the dose, rotation and adverse effects of opiates. Lack of access to proper management of pain, standards and training, professional collaboration, restricted distribution limitations and fears connected with opiates were all barriers to effective management of pain among patients with.

The rising incidence of cancer and the advancements in cancer treatment have led to an increased prevalence of cancer pain. However, many cancer patients still experience inadequate pain management. Nurses play a crucial role in addressing this issue, but they often lack the necessary knowledge and training. Addressing barriers and improving pain management education for nurses is essential for enhancing the quality of life for cancer patients.

Ethical approval

Institutional Review Board approval is not required.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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Supplementary data

Author/s	Country	Aim	Design	Sample	Instrument	Conclusion
Toba et al. (2019) ⁽⁶⁾	Palestine	To evaluate nurses' knowledge and practices about the management of cancer patients in Palestine and to identify the obstacles to effective pain control in cancer management.	Cross-sectional	A convenience sample of 220 participants	Self-administered questionnaire	Effective management is hampered by a lack of knowledge. There were effective pain documenting practices among nurses. These gaps in understanding highlight the need of expanding education on cancer pain management (CPM).
Yu et al. (2022) ⁽¹¹⁾	China	To assess the level of knowledge, practices and perceived obstacles in cancer pain management among medical professionals in oncology units in China.	Cross-sectional	A convenience sample of 1262 participants	Self-administered questionnaire	<40% of people gave the right answer to questions on opioid dosage and rotation, as well as opioid side effects. Knowledge of cancer pain management was highly correlated with training, oncology job experience and educational level.
Li et al. (2021) ⁽²⁾	China	To measure knowledge and attitudes among Chinese oncology nurses about cancer pain management and to identify characteristics related with increased knowledge and attitudes with regards to management of patients with cancer pain.	Cross-sectional	A convenience sample of 982 participants	KASRP questionnaire	The nurses lacked both sufficient information and a good outlook on cancer pain management. Clinical rank and experience caring for cancer patients might be utilised to identify nurses with insufficient knowledge and attitudes about managing cancer pain.
Yu et al. (2021) ⁽¹⁶⁾	China	To assess Chinese oncology nurses' knowledge and attitudes on cancer pain management and to look into relevant issues.	Cross-sectional	A convenience sample of 505 Chinese oncology nurses	Chinese version of KASRP	Most oncology nurses lacked essential information and had inaccurate beliefs regarding cancer pain management. Age, education, training in cancer pain management and clinical experience were all independent variables.
Al-Sayaghi et al. (2022) ⁽¹²⁾	Saudi Arabia	To measure nurses' attitudes and knowledge in pain assessment and management	Cross-sectional	A convenience sample of 291 Chinese oncology nurses	KASRP	The majority of participants had weak knowledge and attitudes. A large disparity was seen in the scores between nurses in the emergency and those in the inpatient wards and those in the outpatient department.
Othman and Al-Atiyat (2022) ⁽¹³⁾	Jordan	To evaluate nurses' knowledge, practices and perceived barriers to treating cancer-related pain.	Cross-sectional	A convenience sample of 502 participants	Nurses, Perceived Impediments and Practice Relating to Cancer Pain Management Tool	There was a knowledge gap in opioid rescue dose deficit among nurses, according to the mean knowledge score for cancer pain management. Sixty-eight percentages of registered nurses said that a lack of knowledge in pain management was the most common difficulty they faced while caring for patients. In contrast, 75.3% and 74.7%, respectively, cited opioid laws and inadequate personnel as major barriers within the healthcare system.

Supplementary data

Author/s	Country	Aim	Design	Sample	Instrument	Conclusion
Samarkandi (2018) ⁽¹⁷⁾	Saudi Arabia	To investigate Saudi nurses' attitudes and knowledge about pain management.	Cross-sectional	A convenience sample of 300 participants	A knowledge and attitudes survey (KAS)	Half of the nurses said they don't receive any pain education. Correct answers averaged 18.5 out of 40 with a possible score range of 3–37. Females had a higher mean score than men when comparing genders, but no significant differences were found when comparing exposure to prior pain education.
Darawad et al. (2019) ⁽¹⁴⁾	Jordan	To compare doctors' and nurses' knowledge and attitudes concerning CPM and identify their perceived impediments to CPM at cancer units.	Cross-sectional	207 participants (72 physicians and 135 nurses) Convenient sampling	Modified version of Knowledge and Attitudes Survey Regarding Pain (KAS)	The knowledge of both doctors and nurses regarding CPM were generally positive. The knowledge and outlook of doctors were much superior to those of nurses. Nurses had superior understanding of CPM guidelines, but they knew less about pharmaceutical pain management and opiate addiction. The most prevalent obstacles to CPM, according to doctors and nurses, are a lack of education, a lack of pain assessment, a shortage of opioids and a lack of psychosocial treatments.
Admass et al. (2020) ⁽¹¹⁾	Ethiopia	To evaluate nurses' knowledge and attitudes about cancer pain management as well as the factors that influence their practice.	Cross-sectional	138 nurses- Convenient sampling	KASRP	Just 7.2% of oncology nurses had adequate knowledge and attitude towards cancer pain management. The average number of successfully answered questions was 20.4 out of 41. A master's degree in nursing was connected favourably with positive attitudes and knowledge regarding cancer pain management.
Imeraj et al. (2022) ⁽¹⁵⁾	Albania	To investigate current nursing practices in the cancer hospital and the degree of knowledge they have regarding pain and its management in clinical settings.	Cross-sectional	119 nurses-cluster sampling	Standardised and structured questionnaire	More than 55% of the nurses who took part in the study had knowledge and experience with both non-pharmacological and pharmaceutical pain management. Although 31.1% of nurses utilised the visual analogue scale for pain evaluation, 36.1% relied on the information supplied by the patients. About 76.5% of nurses believe that pharmacology is the best method of pain management, with 71.4% choosing opioid analgesic medicine and 28.6% choosing non-opioid analgesic medication.
Omer and Nematala (2022) ⁽¹⁸⁾	Iraq	To impact of an educational program on nurses' knowledge, attitude and practices about cancer pain management.	Quasi-experimental study	64 nurses Non-probability (purposive) sample	KASRP	When it came to cancer pain management, nurses lacked experience. Compared to individuals who did not participate in the training, nurses exhibited higher levels of knowledge and attitude towards pain management.

Supplementary data

Author/s	Country	Aim	Design	Sample	Instrument	Conclusion
Tufail (2017) ^[19]	Pakistan	To examine the link between nurses' demographic and educational backgrounds and their knowledge and attitudes about the management of pain in cancer patients.	Cross-sectional	100 nurses Convenient sampling	KASRP	The average pain management knowledge score was 59. The majority of nurses (59%) lacked appropriate knowledge about cancer pain management. The average attitude score was 60, with a range of 34 to 90. The attitudes of nurses regarding pain management were highly correlated with their level of knowledge about pain management.
Omotosho et al. (2023) ^[20]	Gambia	To examine nurses' attitudes and knowledge about pain management.	Cross-sectional	115 nurses Convenient sampling	KASRP	The majority of the nurses had insufficient knowledge and a negative attitude towards pain management. Nurses with bachelor's degrees are more likely to view pain management favourably.
Yassin et al. (2020) ^[21]	Qatar	To evaluate Qatari nurses' knowledge and attitude towards cancer pain management	Descriptive-correlational	126 nurses Convenient sampling	KASRP	The average KASRP was 58%, which is much below the minimum threshold of 80%. Compared to nurses in other units, nurses in palliative care units scored much higher. There were no discernible differences based on gender, age, or educational attainment.
El-Aqoul et al. (2020) ^[22]	Jordan	To examine nurses' knowledge and attitude toward cancer-related knowledge and the impact of a pain management education program on nurses' knowledge and attitude about cancer.	A quantitative, experimental design	132 nurses Random sampling	KASRP	Cancer-related pain knowledge varied from 14 to 35, with a mean of 23.6. Regarding knowledge of cancer-related pain, the intervention group's mean score was 32.7 across two assessment points. At all three assessment points, the intervention group significantly outperformed the control group.
Palassari et al. (2018) ^[23]	Greek	To assess the level of knowledge and attitudes of medical and nursing professionals about cancer pain management.	Cross-sectional	Nursing and medical professionals Convenient sampling	Greek version of the Nurses' Knowledge and Attitudes Survey Regarding Pain	The five most common incorrect replies were associated with evaluation and pain management strategies, addiction, patient pain self-report and route of drug delivery. The five most often right responses were opioid titration, patients' religious and cultural pain behaviours, elderly patients and pain tolerance. Doctors gave more accurate responses (mean 20.8) than nurses (17.5). Correct responses varied by 28.0%, and the factors of age, education and clinical experience in cancer care were all significant. There was a correlation between having more right responses and being younger, working oncology wards, holding a doctorate and participating in ongoing cancer pain education.

Supplementary data

Author/s	Country	Aim	Design	Sample	Instrument	Conclusion
Orujlu <i>et al.</i> (2022) ^[24]	Iran	To investigate the obstacles to successful pain management in Iranian cancer patients.	A qualitative descriptive	14 patients Purposive sampling	Semi-structured interviews	Negative views against the efficacy of analgesics, patients' lack of knowledge of pain self-management techniques and ignored pain management were the primary obstacles to successful pain management. Patients, healthcare professionals and system elements all play a role in the multifaceted character of pain management barriers
Rafii <i>et al.</i> (2021) ^[25]	Iran	To learn more about the challenges associated with pain management at home from the perspectives of family caregivers and cancer patients.	Qualitative exploratory descriptive	32 family caregivers Purposive sampling	In-depth unstructured interviews.	Drug dependence and addiction, malingerer, negative attitudes towards opioid analgesia, concealing pain, painful comorbidities, conflict in family members' perspectives, inaccessibility of pain relief facilities, lack of skill and knowledge, patient depression and hopelessness and caregiver burden were the main obstacles to cancer pain management in the home setting.
Onsongo <i>et al.</i> (2020) ^[26]	Kenya	To investigate oncology nurses' perceptions of obstacles to effective pain management for cancer patients.	Ethnographic design	25 nurses Purposive sampling	Semi-structured interviews and observations	Lack of access to pain management guidelines and training, professional teamwork, rigorous dispensing standard and opioid-related anxieties were all highlighted as impediments.
Liu <i>et al.</i> (2021) ^[27]	China	To assess doctors', nurses', and pharmacists' familiarity with and adoption of evidence-based approaches to and innovations in Chinese medicine (CPM).	Cross-sectional	1279 physicians, 2267 nurses and 1466 pharmacists Convenient sampling	Self-administered questionnaire	Nurses had the greatest degree of practical skill and the best attitudes about pharmacists' involvement and advanced approaches in CPM, while doctors had the strongest command of CPM-related knowledge. Pharmacists fared the poorest in all three areas.

CPM: Cancer pain management, KAS: Knowledge and attitudes survey, KASRP: Knowledge and attitudes survey regarding pain