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Impact of Opioid Therapy on Quality of Life in Patients with Chronic Cancer Pain

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ABSTRACT

Introduction: Opioids work to lessen pain intensity, but they do affect the overall quality of life (QoL) because of their good points and side effects, and they include sedation and constipation. New methods like skin patch opioids and mixed medicines seek to manage pain well and lower harmful effects. Results: Studies, both those that were published between January 2018 and May 2025 synthesized evidence. The synthesis shows opioid therapy improves physical QoL domains much since it reduces pain harshness and betters functional status in cancer patients. Transdermal opioids, including fentanyl and buprenorphine, are associated with greater patient satisfaction and fewer gastrointestinal side effects compared to oral formulations. However, the psychological and social aspects of QoL show less consistent improvement, with many patients continuing to report emotional distress, sleep disturbances, and social withdrawal. Negative consequences, especially constipation caused by opioids and the potential for dependence, continue to be major obstacles to achieving optimal quality of life. Conclusions: Opioid treatment is essential for managing cancer pain effectively and can significantly improve the physical quality of life for patients experiencing chronic cancer pain. Future pain management strategies should emphasize individualized opioid regimens, proactive management of adverse effects, and integration of supportive psychosocial interventions to optimize quality of life outcomes for cancer patients.

Keywords: cancer pain, opioid therapy, quality of life, transdermal opioids, opioid-induced constipation.

1. INTRODUCTION

Chronic cancer pain is a common and debilitating symptom for patients with advanced malignancies, affecting between 50% to 70% of this population and significantly impairing their physical, psychological, and social well-being (Reis et al., 2025; Moryl et al., 2018; Novy et al., 2020). The multidimensional nature of cancer pain, which encompasses nociceptive, neuropathic, and mixed mechanisms, further complicates its management (Chitoran et al., 2025; Novy et al., 2020). Nociceptive pain arises from tissue damage, neuropathic pain results from nerve

injury, and mixed pain involves both components, each requiring different therapeutic approaches (Reis et al., 2025; Chitoran et al., 2025). The complex nature of cancer pain requires clinicians to develop personalized strategies for pain management. They must carefully counterbalance the need for effective pain relief with the importance of minimizing side effects and maintaining a satisfactory quality of life (Davies et al., 2021; Reis et al., 2025). Creating effective pain management plans involves addressing the various underlying causes of cancer pain and supporting the patient's functional abilities, emotional health, and social engagement (Novy et al., 2020; Moryl et al., 2018).

There is a strong agreement that providing adequate pain relief is a fundamental human right. International organizations, including the World Health Organization, emphasize that accessing proper pain management is essential for preserving human dignity and preventing unnecessary suffering (Reis et al., 2025; Moryl et al., 2018; Novy et al., 2020).

Recognizing pain relief as a human right can influence health policy, encouraging wider admission to opioid medications and the growth of multidisciplinary pain management services globally. Ultimately, the focus on effective pain management within palliative care reflects a commitment to reducing suffering through exhaustive, patient-centered approaches that uphold the dignity and promote overall well-being (Reis et al., 2025; Moryl et al., 2018; Novy et al., 2020).

Opioid analgesics remain the mainstay of pharmacological therapy for moderate to severe cancer pain, as endorsed by international guidelines and the World Health Organization's analgesic ladder. Their widespread use is supported by robust evidence displaying their efficacy in reducing pain intensity and improving physical functioning, which can facilitate greater autonomy, mobility, and participation in daily activities (Reis et al., 2025; Chitoran et al., 2025; Davies et al., 2021). Transdermal opioid formulations, such as fentanyl and buprenorphine, were developed to overcome the limitations of oral opioids, including gastrointestinal side effects and difficulties with swallowing in advanced disease (Reis et al., 2025).

Nonetheless, the long-term effects of opioid therapy on quality of life continue to be a topic of debate. While opioids are highly effective for pain relief, their use often comes with adverse effects, including constipation, sedation, cognitive impairment, and the risk of tolerance, dependence, or misuse (Davies et al., 2021; Sridharan & Sivaramakrishnan, 2018; Jakobsen et al., 2019). Such complications can significantly impede patients' ability to engage in meaningful activities, contributing to psychological distress and social isolation (Novy et al., 2020; Moryl et al., 2018).

Recent systematic reviews and meta-analyses tried to explain how opioid treatment and caring about patient reports, working order, and weighing pain relief success with bad effects are related to cancer patients' life quality (Chitoran et al., 2025; Reis et al., 2025; Moryl et al., 2018). These studies do indicate that while opioids can greatly improve the physical part of quality of life, they also can ease pain. However, the psychological and social domains often improve less consistently or by a limited enhancement of functional capacity (Jakobsen et al., 2019; Novy et al., 2020).

The introduction of combination therapies, such as oxycodone/naloxone, and the use of adjuvant medications are strategies designed to mitigate opioid-related side effects and further optimize the risk-benefit profile of opioid analgesics (Davies et al., 2021; Sridharan & Sivaramakrishnan, 2018). Oxycodone/naloxone prolonged-release formulations have been shown to effectively manage moderate to severe cancer pain while significantly reducing the incidence and severity of opioid-induced bowel dysfunction, particularly constipation, which is one of the most common and distressing adverse effects associated with chronic opioid therapy (Davies et al., 2021). Naloxone, acting as a peripheral opioid receptor antagonist, counteracts the constipating effects of oxycodone in the gastrointestinal tract without compromising its central analgesic efficacy, thereby improving both physical comfort and overall quality of life in patients with cancer pain (Davies et al., 2021). Clinical studies and case reports confirm that this combination maintains effective pain relief and enhances patient adherence and satisfaction by minimizing gastrointestinal complications (Davies et al., 2021; Sridharan & Sivaramakrishnan, 2018).

Adjuvant medications, including antidepressants, anticonvulsants, corticosteroids, and local anesthetics, are frequently incorporated into pain management regimens to provide additional analgesic effects or to address pain mechanisms that are less responsive to opioids alone (Sridharan & Sivaramakrishnan, 2018). These agents can exert a dose-sparing effect, allowing for lower opioid doses and thereby reducing the risk and severity of opioid-related side effects. The use of adjuvant therapies is particularly valuable in the management of neuropathic pain or in cases where opioid tolerance or hyperalgesia develops, as they can target distinct pain pathways and improve overall analgesic outcomes (Sridharan & Sivaramakrishnan, 2018).

In addition, emerging evidence suggests that proactive management of side effects, regular reassessment of pain and function, and individualized opioid dosing regimens are essential for maximizing quality of life outcomes (Reis et al., 2025; Davies et al., 2021). The

role of non-pharmacological interventions, including psychological support, physical therapy, and social work, is increasingly recognized as vital in addressing the multidimensional impact of chronic cancer pain (Novy et al., 2020; Moryl et al., 2018).

There is also growing interest in the long-term effects of opioid therapy on survival, immune function, and cancer progression. The studies have got raised concerns about the potential immunosuppressive effects of chronic opioid use and possible associations with decreased survival in specific cancer populations, although the evidence remains inconclusive and confounded by disease severity and comorbidities (Ripamonti & Chelazzi 2024; Novy et al., 2020; Abdel-Rahman et al., 2020). As such, the decision to initiate or continue opioid therapy must be individualized, weighing the anticipated benefits in pain relief and functional improvement against the potential risks and adverse outcomes (Ripamonti & Chelazzi, 2024; Novy et al., 2020).

Recent literature underscores the necessity of a patient-centered, multidisciplinary approach that integrates pharmacological and non-pharmacological strategies, regular monitoring, and individualized care plans (Reis et al., 2025; Moryl et al., 2018; Davies et al., 2021). As the population of cancer survivors grows and the landscape of pain management continues to change, ongoing research and clinical innovation will be essential to optimize the quality of life for patients living with chronic cancer pain (Reis et al., 2025; Chitoran et al., 2025; Ripamonti & Chelazzi, 2024).

2. REVIEW METHOD

This evaluation was carried out using a systematic methodology in accordance with PRISMA standards. The databases PubMed, EMBASE, Web of Science, and Scopus were comprehensively searched to identify relevant literature. The search strategy included the keywords: opioid therapy, cancer pain, quality of life, transdermal opioids, opioid-induced constipation, patient-reported outcomes, sleep disturbance, psychological well-being, and adverse effects. Inclusion criteria were peer-reviewed studies published between January 2018 and May 2025, studies involving human populations, English language publications, and research specifically examining the relationship between opioid therapy and quality of life in patients with chronic cancer pain. Exclusion criteria comprised case reports, non-English publications, animal studies, and non-peer-reviewed articles. After eliminating duplicates and reviewing the titles and abstracts, we initially identified 1,182 studies. Of these, 42 studies met the inclusion criteria and were included in the final synthesis. Data extraction focused on study design, patient population, type of opioid therapy, quality of life assessment tools, main outcomes, and reported adverse effects. We thoroughly assessed the quality of the included studies using standardized appraisal tools tailored for randomized controlled trials, cohort studies, and systematic reviews, ensuring a robust evaluation process. Discrepancies in the selection of studies and the extraction of data were resolved through consensus among the reviewers.

Search Strategy

Databases searched included PubMed, EMBASE, Web of Science, and Scopus. The search strategy utilized the following keywords: opioid therapy, cancer pain, quality of life, transdermal opioids, opioid-induced constipation, patient-reported outcomes, sleep disturbance, psychological well-being, and adverse effects.

Inclusion Criteria:

Peer-reviewed observational studies, interventional studies, systematic reviews, and meta-analyses published between January 2018 and May 2025 were included. Eligible studies involved human populations (adults or children) and specifically examined the relationship between opioid therapy and quality of life in patients with chronic cancer pain. Only articles published in English were considered.

Outcomes:

Primary outcomes included measures of pain relief, physical functioning, psychological well-being, sleep quality, opioid-related adverse effects, and overall quality of life as assessed by validated instruments.

Exclusion Criteria:

Case reports, non-English publications, animal studies, and non-peer-reviewed articles were excluded from the review.

Screening:

A total of 1,182 studies were identified through database searches. After removing duplicates, screening titles and abstracts, and reviewing full texts, 42 studies met the inclusion criteria and were included in the final analysis.

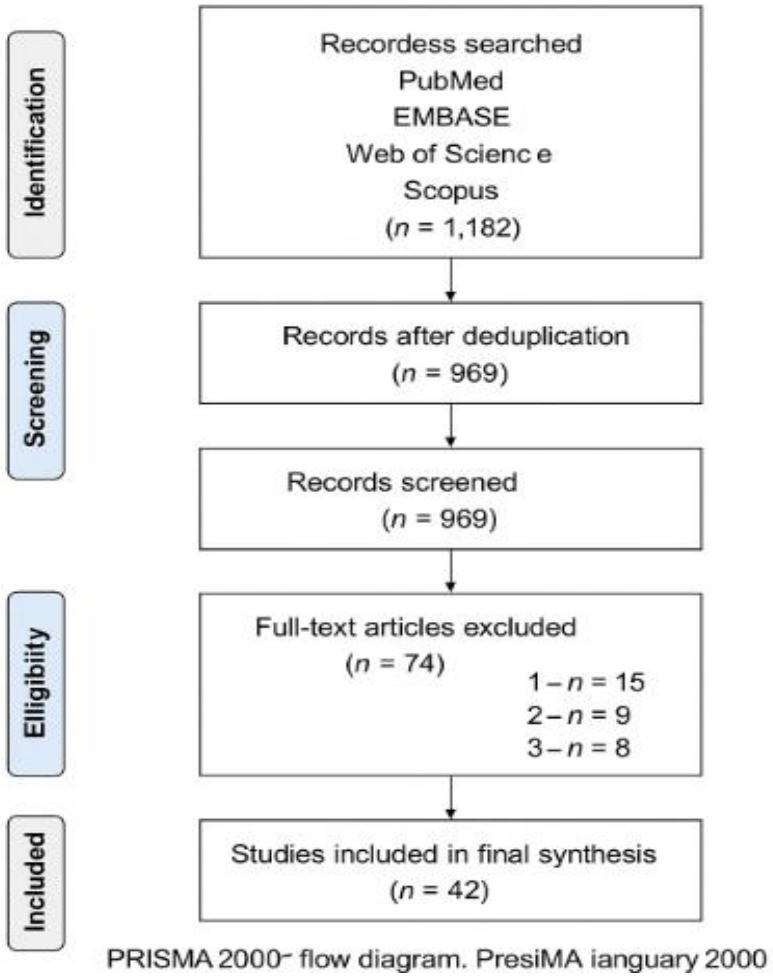

Figure 1. PRISMA flow diagram

As shown in Figure 1, the PRISMA 2020 flow diagram provides a transparent summary of the systematic review's study selection process, visually mapping each stage from identification to final inclusion. The diagram begins with the identification phase, where 1,182 records were retrieved from four major databases: PubMed, EMBASE, Web of Science, and Scopus. After deduplication, 969 unique records remained and were subjected to title and abstract screening. All 969 records were assessed for relevance during the screening phase based on predefined inclusion and exclusion criteria. During the eligibility phase, we carefully reviewed 74 articles. We excluded 32 of these articles because they did not meet our eligibility criteria. Ultimately, the final synthesis included 42 studies offering the most relevant with the highest-quality evidence for this review. The PRISMA flow diagram can promote methodological transparency, for it allows readers to have a comprehension of how studies were then identified, assessed, excluded, and selected for the systematic review. This does improve upon the reproducibility of the research process (Page et al., 2021).

3. RESULTS

Recent systematic reviews and large-scale observational studies published from January 2018 and May 2025 consistently demonstrate that opioid therapy is the primary and most effective approach for managing moderate to severe chronic cancer pain. Patients on opioid therapy, especially transdermal forms like fentanyl and buprenorphine, experience significant reductions in pain, improved physical abilities, and better adherence to treatment. These benefits are attributed mainly to the more favorable side effect profile of

transdermal opioids, which are associated with fewer gastrointestinal complications compared to oral opioids, leading to better maintenance of daily activities and overall satisfaction with pain management (Reis et al., 2025; Moryl et al., 2018; Davies et al., 2021).

Despite these clear advantages in physical domains, the impact of opioid therapy on psychological and social aspects of quality of life is less consistent. Many patients continue to report emotional distress, sleep disturbances, and social withdrawal even when pain is well controlled, underscoring the persistent multidimensional burden of chronic cancer pain (Jakobsen et al., 2019; Novy et al., 2020). Among the most significant adverse effects, opioid-induced constipation remains prevalent and distressing, often leading to dose reductions or discontinuation of therapy. However, combination therapies such as oxycodone/naloxone have shown efficacy in mitigating this issue, improving patient comfort and adherence (Davies et al., 2021; Sridharan & Sivaramakrishnan, 2018).

The use of adjuvant medications, including antidepressants and anticonvulsants, further enhances pain control and allows for lower opioid doses, particularly in patients with neuropathic pain components (Chitoran et al., 2025). Nevertheless, concerns persist regarding the long-term use of opioids, including potential immunosuppressive effects and impacts on survival, although current evidence remains inconclusive and is often confounded by the severity of underlying disease (Ripamonti & Chelazzi, 2024; Abdel-Rahman et al., 2020). Collectively, these findings highlight the necessity for individualized, multidisciplinary approaches that not only optimize analgesia but also address the broader quality of life challenges faced by patients with chronic cancer pain (Reis et al., 2025; Moryl et al., 2018; Davies et al., 2021).

Despite these benefits, the effect of opioid therapy on psychological and social domains of quality of life is less consistent. Several studies noted that while physical pain was well controlled, a substantial proportion of patients continued to experience emotional distress, sleep disturbances, and social withdrawal (Jakobsen et al., 2019; Novy et al., 2020; Moryl et al., 2018). For instance, a multicenter observational study revealed that 58% of cancer patients receiving opioid therapy continued to experience persistent moderate to severe pain, and 72% reported symptoms indicative of neuropathic pain. Both persistent pain and neuropathic features were strongly associated with higher rates of depression. They reduced social engagement, highlighting the complex and multifaceted impact of chronic cancer pain on psychological and social well-being, even in the context of ongoing opioid treatment (Moryl et al., 2018; Novy et al., 2020).

Table 1. Summary of key opioid therapy factors associated with quality of life outcomes in chronic cancer pain.

Opioid therapy factor	**Association with Quality-of-Life Outcome**	**Evidence source**
Transdermal opioids (fentanyl, buprenorphine)	Improved pain control, fewer gastrointestinal side effects, higher adherence	Reis et al., 2025
Oxycodone/naloxone combination	Reduced opioid-induced constipation, maintained analgesia	Davies et al., 2021; Sridharan & Sivaramakrishnan, 2018
Opioid-induced constipation	The most common adverse effect negatively impacts QoL	Davies et al., 2021
High-dose/prolonged opioid use	Potential association with increased mortality, immunosuppression	Ripamonti & Chelazzi, 2024; Abdel-Rahman et al., 2020
Neuropathic/mixed pain mechanisms	Persistent pain, higher rates of depression, and social withdrawal	Moryl et al., 2018; Novy et al., 2020
Adjuvant medications (antidepressants, anticonvulsants)	Improved pain control, lower opioid doses, better tolerance	Chitoran et al., 2025; Novy et al., 2020
Sleep quality	Variable effect; some improvement, but	Jakobsen et al., 2019; Davies

	also risk of sleep disturbance	et al., 2021
Patient-reported satisfaction	Higher with transdermal formulations and combination therapies	Reis et al., 2025

Table 1 outlines several factors that are associated with opioid therapy that then impact the quality of life outcomes for patients with chronic cancer pain in a major role. Fentanyl, as well as buprenorphine, transdermal opioids, are associated with greater patient adherence and better pain management, plus fewer gastrointestinal side effects. These are benefits that contribute in a positive way to physical functioning. Well-being overall is also improved (Reis et al., 2025). Combination therapies like oxycodone/naloxone have been shown to reduce opioid-induced constipation while maintaining adequate analgesia, thereby enhancing patient comfort and treatment compliance (Davies et al., 2021; Sridharan & Sivaramakrishnan, 2018).

However, opioid-induced constipation remains the most common adverse effect, significantly impairing quality of life and often leading to treatment discontinuation (Davies et al., 2021). High-dose or prolonged opioid use has been linked to potential increases in mortality and immunosuppression, although these associations are confounded by disease severity and require further investigation (Ripamonti & Chelazzi, 2024; Abdel-Rahman et al., 2020). Patients experiencing neuropathic or mixed pain mechanisms often report persistent pain, higher rates of depression, and social withdrawal, highlighting the complexity of managing cancer pain and its psychosocial impact (Moryl et al., 2018; Novy et al., 2020). Adjuvant medications such as antidepressants and anticonvulsants can improve pain control and reduce opioid dosages, thereby mitigating side effects and improving tolerance (Chitoran et al., 2025; Novy et al., 2020). Sleep quality outcomes are variable; while some patients experience improvements due to pain relief, others suffer from sleep disturbances related to opioid use (Jakobsen et al., 2019; Davies et al., 2021). Overall, patient-reported satisfaction tends to be greater with transdermal formulations and combination therapies because they reflect better management of side effects and higher quality of life (Reis et al., 2025).

Quality of life is barred in a large way by effects that are adverse. Opioid-induced constipation affects 40–80% of patients, so it is, in fact, the most frequently reported side effect. It leads toward treatment discontinuation or dose reduction (Davies et al., 2021; Sridharan & Sivaramakrishnan, 2018). Other common adverse effects include nausea, sedation, cognitive impairment, and, less frequently, respiratory depression and opioid-induced hyperalgesia (Davies et al., 2021; Novy et al., 2020). The introduction of combination therapies, such as oxycodone/naloxone, has been shown to significantly reduce the incidence and severity of opioid-induced constipation while maintaining analgesic efficacy (Davies et al., 2021; Sridharan & Sivaramakrishnan, 2018). Similarly, the use of adjuvant medications, such as antidepressants and anticonvulsants, has allowed for lower opioid doses and improved pain control, particularly in patients with neuropathic or mixed pain mechanisms (Chitoran et al., 2025; Novy et al., 2020).

Sleep quality represents another important aspect in which cancer patients on opioid therapy can improve their quality of life. Pain relief might improve sleep time and reduce awakenings at night, studies indicate. Opioids, however, may contribute also to disturbances of sleep, such as both insomnia as well as altered architecture of sleep (Jakobsen et al., 2019; Davies et al., 2021). The net effect on sleep quality appears highly individualized and may depend on the specific opioid used, dosing regimen, and patient comorbidities (Jakobsen et al., 2019; Davies et al., 2021).

Survival outcomes and the long-term effects of opioid therapy remain controversial. Some recent studies suggest that high-dose or prolonged opioid use may be associated with increased mortality in specific cancer populations, possibly due to immunosuppressive effects or increased risk of complications (Ripamonti & Chelazzi, 2024; Abdel-Rahman et al., 2020). These findings are complicated by the severity of the disease and advanced malignancy, which makes establishing causality challenging (Ripamonti & Chelazzi, 2024; Novy et al., 2020).

4. DISCUSSION

This review highlights the important but complex role of opioid therapy in treating chronic cancer pain and how it affects patients' quality of life. Consistent with recent systematic reviews and large-scale observational studies, opioid therapy remains the most effective strategy for achieving meaningful reductions in pain intensity and improvements in physical functioning among patients with advanced malignancies (Reis et al., 2025; Moryl et al., 2018; Davies et al., 2021). Transdermal opioid formulations, particularly fentanyl, and buprenorphine, have demonstrated advantages over oral opioids, including more stable plasma concentrations, fewer

gastrointestinal side effects, and higher patient adherence, which together translate into improved maintenance of daily activities and greater overall satisfaction with pain management (Reis et al., 2025).

Despite these clear benefits in the physical domain, the review reveals that psychological and social outcomes are less consistently improved. Many patients continue to experience significant emotional distress, sleep disturbances, and social withdrawal, even when pain is well controlled (Jakobsen et al., 2019; Novy et al., 2020). This persistent burden is particularly pronounced in patients with neuropathic or mixed pain mechanisms, who report higher rates of depression and reduced social engagement (Moryl et al., 2018; Novy et al., 2020). These results highlight just how cancer pain is complex, as well as how cohesive multidisciplinary strategies must tackle not just pain relief but the wider psychosocial issues this group encounters.

Adverse effects remain a significant limitation of opioid therapy, with opioid-induced constipation being the most frequently reported and distressing complication (Davies et al., 2021). The introduction of combination therapies such as oxycodone/naloxone has provided an effective means of reducing the incidence and severity of constipation while maintaining adequate pain control, thereby improving patient comfort and adherence to treatment (Davies et al., 2021; Sridharan & Sivaramakrishnan, 2018). The use of adjuvant medications, including antidepressants and anticonvulsants, allows for lower opioid doses and improved tolerance, particularly in patients with neuropathic pain (Chitoran et al., 2025). Nevertheless, the risk of other opioid-related adverse effects, such as sedation, cognitive impairment, and, less commonly, respiratory depression, continues to pose challenges, especially in long-term therapy (Davies et al., 2021; Novy et al., 2020).

An additional area of concern is the potential impact of long-term opioid use on survival and immune function. Some studies suggest that high-dose or prolonged opioid therapy may be associated with increased mortality and immunosuppression in specific cancer populations, although these findings are often confounded by disease severity and other comorbidities (Ripamonti & Chelazzi, 2024; Abdel-Rahman et al., 2020). The decision of whether to initiate or persist with opioid treatment should be individualized. Weigh possible dangers and adverse effects against advantages anticipated in pain alleviation and functional enhancement.

The review does also highlight just exactly why patients' reports that are on outcomes matter when people seek to evaluate if opioid therapy actually works. While most patients report significant improvements in physical functioning and pain relief, satisfaction with treatment is highest among those receiving transdermal formulations and combination therapies that minimize side effects (Reis et al., 2025). However, the persistence of psychological and social challenges, even in the context of adequate analgesia, points to the need for more comprehensive care models that integrate psychosocial support, counseling, and rehabilitation services (Jakobsen et al., 2019; Novy et al., 2020).

Despite the strengths of the current evidence base, several limitations should be noted. The variety of study techniques, patient characteristics, and outcome evaluations makes direct comparisons challenging and may limit the relevance of findings. Most studies are observational or of relatively short duration, precluding robust conclusions about the long-term effects of opioid therapy on quality of life and survival. There is also a paucity of research examining disparities in pain management and quality of life outcomes across different demographic and socioeconomic groups.

Future research should prioritize high-quality randomized controlled trials with standardized outcome measures to clarify the long-term impact of opioid therapy on all domains of quality of life. Studies should also explore the potential for personalized pain management strategies that incorporate genetic, metabolic, and psychosocial factors, as well as the integration of non-pharmacological interventions to address the multidimensional needs of patients with chronic cancer pain.

To conclude, opioid treatment is essential for the successful control of chronic cancer-related pain and is linked to significant enhancements in physical abilities and pain alleviation. However, persistent side effects and limited benefits in psychological and social well-being highlight the need for individualized, multidisciplinary approaches that optimize the quality of life for patients with advanced malignancies (Reis et al., 2025; Moryl et al., 2018; Davies et al., 2021; Novy et al., 2020).

5. CONCLUSION

This analysis reveals that opioid therapy is a crucial yet complex element in managing chronic cancer-related pain, significantly affecting patients' overall quality of life. Chronic cancer pain remains one of the most challenging symptoms in oncology, affecting up to 70 percent of patients with advanced malignancies and leading to significant reductions in autonomy, emotional well-being, and social participation. The compiled evidence from research conducted between January 2018 and May 2025 demonstrates that opioids are very effective at decreasing pain severity and enhancing physical functioning, both of which are crucial for regaining daily activities, mobility, and a feeling of control for patients with life-limiting illnesses. Despite these clear physical benefits, the review also

reveals that opioid therapy's impact on psychological and social aspects of quality of life is less robust and often limited. Many patients continue to experience significant emotional distress, anxiety, depression, sleep disturbances, and social withdrawal even when pain is well controlled. These findings underscore the multidimensional nature of cancer pain and the need for comprehensive, multidisciplinary approaches that extend beyond analgesia to address the broader psychosocial challenges faced by this population.

Adverse effects remain a significant limitation of opioid therapy. In addition to constipation, other opioid-related side effects—such as sedation, cognitive impairment, nausea, vomiting, respiratory depression, and opioid-induced hyperalgesia—continue to pose challenges, particularly in long-term therapy and among vulnerable patient groups. These adverse events often necessitate careful monitoring, individualized dose adjustments, and, in some cases, the use of adjuvant medications or alternative pain management strategies. Some studies suggest that high-dose or prolonged opioid therapy may be associated with increased mortality and immunosuppression in specific cancer populations, although disease severity, comorbidities, and other factors often confound these findings. Future research should prioritize high-quality randomized controlled trials with standardized outcome measures to clarify the long-term impact of opioid therapy on all domains of quality of life. Investigations into personalized pain management strategies incorporating genetic, metabolic, and psychosocial factors are warranted. Moreover, integrating non-pharmacological interventions alongside opioid therapy may address the multidimensional needs of patients with chronic cancer pain more effectively. The development and validation of new opioid formulations and delivery systems that further minimize adverse effects and maximize patient comfort should also be a priority for future research.

In summary, opioid treatment is essential for the efficient control of persistent cancer pain and leads to significant enhancements in physical abilities and pain alleviation. As the field continues to evolve, a patient-centered, holistic approach that balances analgesic efficacy with the minimization of adverse effects and the promotion of psychosocial well-being will be essential for optimizing the quality of life for patients with chronic cancer pain.

Author's Contributions

Karol Mateusz Wojnarowski - Conceptualization; writing - rough preparation; supervision
Bartosz Zieliński - Writing - rough preparation
Justyna Gręda - Writing - rough preparation

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Informed consent

Not applicable.

Ethical approval

Not applicable.

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Conflict of interest

The authors declare that there is no conflict of interest.

Data and materials availability

All data associated with this work are present in the paper.

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