



# Combining OMM with Palliative Care to Maximize the Quality of Life in Cancer Patients

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## INTRODUCTION

The utilization of palliative care is increasingly prevalent in the care of patients facing serious illnesses. The National Institute on Aging (NIA) defines palliative care as a specialized care approach that enhances a patient's current healthcare by focusing on the quality of life for them and their family (1). The National Consensus Project for Quality Palliative Care (NCPQPC) identifies the domains of palliative care as: structure of care, physical aspects of care, psychological aspects of care, social aspects of care, spiritual aspects of care, and cultural aspects of care. Palliative care resources are not limited to a specific setting. Rather, they apply throughout the course of comorbidities and illnesses and encompass a variety of healthcare settings such as hospitals, nursing homes, and patient homes (2). Similarly to the NCPQPC, there are five models, or domains, of osteopathic medicine that Osteopathic Physicians abide by: biomechanical, respiratory-circulatory, metabolic, neurologic, and biopsychosocial (3). The World Health Organization (WHO) specifies that the majority of patients requiring palliative care have diagnoses of cardiovascular disease, cancer, chronic respiratory disease, AIDS, diabetes, kidney or liver disease, and multiple sclerosis (4). The WHO also indicates that the two most common complaints of patients who are enrolled in palliative care services are pain and difficulty breathing (4). Several osteopathic techniques are effective in reducing pain as well as improving breathing, such as doming the thoracic diaphragm, rib raising, muscle energy, and myofascial release (5-8). Specifically, geriatric palliative care patients with oncologic diagnoses had their pain reduced by osteopathic manipulation (9). This project postulates that osteopathic techniques should be included in palliative care treatment plans as an additional technique to improve quality of life for patients and their families.

## METHOD

A literature review was conducted using several databases, including PubMed and SageJournals, with the keyphrase "osteopathy cancer pain" to identify studies meeting criteria for a meta-analysis. The resulting publications were then screened for relevance; additionally, the references of these articles were also screened. Data was focused on pain, which tends to universally be scaled in a quantitative fashion. Patients with any type of cancer were included, with those types including, but not limited to, head, neck, prostate, breast, and colorectal.

Three studies were analyzed investigating the impact of OMT on pain in palliative populations with cancer (9-11). Data was obtained from each paper focusing on pain levels before and after OMT application, as well pain levels for control groups receiving either non-OMT therapy or placebo therapy. The studies utilized either the Visual Analogue Scale (VAS) or Numerical Rating Scale (NRS) to quantify pain on a scale from 0 to 10, with "0" representing no pain and "10" representing the worst pain imaginable.

## RESULTS & DISCUSSION

Meta-analysis was performed on the studies meeting the inclusion criteria. The data was aggregated to establish the total sample sizes, means for both pre-treatment and post-treatment, differences between means, and respective standard deviations for the four categories (Table 1). Additionally, the difference of means between the control group pre and post treatment was found to be 1.93 (standard deviation [SD] = 3.52); the difference of means between the OMT group pre and post treatment was found to be 3.55 (SD = 3.42). A two-tailed Student's T-test was performed to compare these values; A p-value < 0.05 was documented, indicating statistical significance (Figure 1).

The outcomes of this meta-analysis have served to provide greater insight into osteopathic techniques in palliative care for patients with cancer. Our results indicate that OMT significantly decreases patients' pain when paired with palliative care and conventional cancer treatment (9-11).. Reduction of pain with the inclusion of OMT is significantly larger than the reduction associated with conventional therapies, as shown in the bar graph. This further strengthens our hypothesis and analysis regarding the value of including OMT in palliative care.

Our hypothesis aligns with our results, confirming that OMT is complementary to palliative care in patients with cancer. These results coincide with existing literature, which suggests that osteopathic techniques, such as joint mobilization and soft tissue manipulation, can effectively alleviate pain by addressing musculoskeletal issues commonly associated with cancer and aging. The positive impact on pain outcomes is a crucial aspect, considering the prevalence of pain in oncology patients undergoing palliative care. The application of OMT introduces a holistic approach that extends beyond conventional pain management strategies.

It is also worth noting the importance of early integration of OMT into the palliative care regimen. It is associated with improved pain outcomes in cancer patients. By incorporating osteopathic techniques at an early stage, healthcare providers have the potential to proactively manage pain, prevent the exacerbation of musculoskeletal issues, and contribute to their overall well-being. Although OMT has shown to be beneficial to patients with cancer (9), further studies should explore the effects of early versus late application of OMT on pain of oncology patients undergoing palliative care.

It is also important to continue researching the effects of OMT on acute versus chronic pain in oncologic populations. Based on our analysis, a structured OMT pain regimen should be added to a palliative care plan to provide the best outcomes in the oncologic population.

This meta-analysis has some limitations – its sample sizes, grouping of different causal factors, and lack of randomization. All of these factors could have altered the consistency of the data.

Studies	Control				OMT			
	Sample Size	Mean Pre-Treatment (SD)	Mean Post-Treatment (SD)	Difference of Means (SD)	Sample Size	Mean Pre-Treatment (SD)	Mean Post-Treatment (SD)	Difference of Means (SD)
Serra-Añó et al. 2018	11	4.95 (2.09)	3.77 (2.49)	1.18	13	6.48 (1.52)	2.87 (1.99)	3.61
Arienti et al. 2018	11	3.36 (2.20)	2.00 (2.05)	1.36	12	6.08 (3.40)	3.25 (2.89)	2.83
Castro-Martín et al. 2021	22	5.68 (2.47)	3.59 (2.70)	2.09	22	5.32 (2.43)	1.41 (2.30)	3.91
Total	47	4.92 (2.46)	2.99 (2.53)	1.93 (3.52)	44	5.83 (2.40)	2.28 (2.48)	3.55 (3.42)

Table 1: Pain level Outcomes of treatment. SD = Standard Deviation.

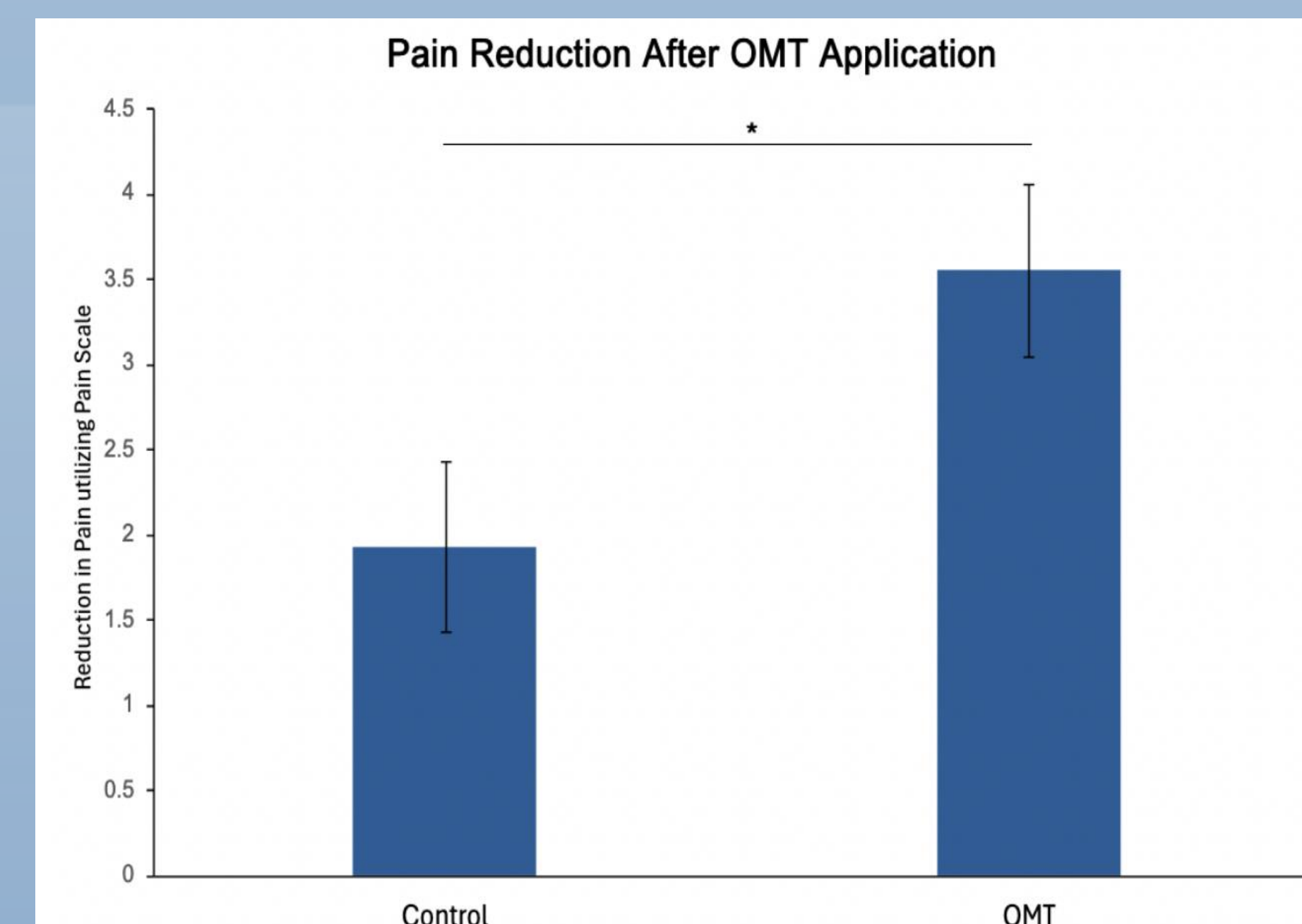


Figure 1: Comparison of the difference in pain scale rating before and after treatment between groups receiving Osteopathic Manipulative Techniques (OMT) versus Control groups. Control groups include placebo or standard, non-OMT treatment. Note that the significance level is p < 0.05.

## CONCLUSION

Although our results indicate positive outcomes, it is essential to recognize the necessity for more extensive research and larger-scale studies to establish the effectiveness of OMT in oncology patients undergoing palliative care more thoroughly. Furthermore, delving into the experiences of patients concerning the incorporation of OMT can offer valuable insights into the acceptability and feasibility of integrating this holistic approach. In conclusion, our meta-analysis did show a significant decrease in pain in cancer patients when OMT was paired with palliative care. Therefore, our analysis contributes to the growing body of evidence supporting the integration of osteopathic manipulation techniques in the palliative care of oncology patients, particularly in improving pain outcomes. This discussion sets the stage for future research endeavors, showcasing the potential of OMT to elevate the care offered to this vulnerable population.

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