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Cancer Pain Relief After Healing Touch and Massage

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Abstract

Objectives: To establish and compare the effectiveness of Healing Touch (HT) and Oncology Massage (OM) therapies on cancer patients' pain.

Design: pretest/post-test, observational, retrospective study.

Settings/Location: Outpatient oncology setting at an academic hybrid, multisite, community-based cancer institute.

Subjects: $n = 572$ cancer outpatients.

Interventions: Patients reported pain before and after receiving a single session of either HT or OM from a certified practitioner.

Outcome measures: Pain scores from 0 = *no pain* to 10 = *worst possible pain.*

Results: Two hundred ninety-one patients (50.9%) receiving HT and 281 (49.1%) receiving OM reported pretherapy and post-therapy pain. Pretherapy mean pain was higher in HT patients (M = 5.1, ±2.2) than OM (M = 4.4, ±2.2), $p < 0.001$; post-therapy mean pain remained higher in HT patients (M = 2.6, ±2.1) than OM (M = 2.0, ±1.8), $p < 0.001$. Both HT ($p < 0.01$) and OM ($p < 0.01$) significantly reduced pain. Unadjusted rates of clinically significant pain improvement (defined as ≥2-point reduction in pain score) were 0.68 HT and 0.71 OM. Adjusted for pretherapy pain, OM was associated with increased odds of pain improvement (odds ratio [OR] 1.49 95% confidence interval (1.02–2.19); $p = 0.041$). For patients with severe pretherapy pain, OM was not more effective in yielding clinically significant pain reduction ($p = 0.236$) when adjusting for pretherapy pain score.

Conclusions: Both HT and OM provided immediate pain relief. Future research should explore the duration of pain relief, patient attitudes about HT compared with OM, and how this may differ among patients with varied pretherapy pain levels.

Keywords: cancer pain, Healing Touch, Oncology Massage, nonpharmacologic pain management

Introduction

Cancer-related pain

Pain is a frequent and distressing symptom for cancer patients. Sixty-four percent of those with metastatic or advanced-stage cancer experience pain, and undertreated pain is found in up to 40% of all cancer patients.[1] Cancer pain is associated with reduced survival, accelerated progression of metastatic disease, and reduced quality of life.[2] Likewise, the growing population of cancer survivors is often burdened with chronic pain.[3] The National Comprehensive Cancer Network's (NCCN) pain management guidelines emphasize nonpharmacologic interventions, including physical, cognitive, and spiritual pain management tools.[4] The American Society of Clinical Oncology (ASCO) pain management guidelines also highlight the importance of nonpharmacologic integrative therapies.[5]

Integrative oncology therapies for pain

The growing field of integrative oncology (IO) provides pain management solutions that meet these guidelines. With better

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symptom control, patient suffering is reduced and ability to endure conventional cancer treatments (i.e., surgery, radiation, chemotherapy) is improved.[6] IO uses safe, evidence-based complementary medicine alongside conventional cancer treatment. It seeks to improve the mind, body, and spirit through providing nonpharmacologic, noninvasive, and nonsurgical symptom control options.[7] Integrative therapies include Healing Touch (HT), massage, acupuncture, mindfulness, Reiki, and others to ease physical and emotional cancer symptoms.[8] Integrative therapies HT and Oncology Massage (OM) are promising in managing certain types of pain for some cancer patients or as an adjuvant to other pain management modalities, including opioids.

Healing Touch

Based on ancient Eastern healing practices, HT is a biofield therapy in the field of energy medicine[9] that helps to restore and balance energy that has been disrupted due to stress, illness, injury, grief, or medical treatments such as chemotherapy and radiation. HT practitioners use light, gentle touch and/or make sweeping hand motions with their hands near the patient's body to restore and balance energy interrupted by emotional and physical stressors.[10] It has demonstrated ability to improve health-related quality of life and reduce respiratory rate, heart rate, blood pressure, pain, mood disturbances, and fatigue.[9] In a randomized controlled trial on women with cancer, HT resulted in better health-related quality of life, physical functioning, and vitality with reduced pain.[11] Multiple studies suggest that HT effectively manages pain in cancer patients,[12,13] but further studies are needed.[9]

Oncology Massage

Oncology Massage (OM) is also a useful tool for managing physical and emotional stressors associated with cancer and its treatments. OM therapists apply gentle pressure and kneading of patients' muscles and joints. Techniques are customized by adjusting the positioning, pressure, pace, and/or site to consider medical devices, side effects of drug treatments, and discomfort or pain associated with cancer and its treatments, including surgery, radiation, and chemotherapy.[14] Quality of life and coping abilities are also strengthened after OM.[15] A systematic review of OM randomized control studies suggests that massage relieves pain, nausea, stress, depression, anxiety, and fatigue while improving sleep and mental clarity, yet additional high methodological quality studies are needed.[16]

Paucity of research on HT and OM for cancer-related pain

Few studies compare HT with OM for pain improvement. Post-White et al. found that pain was significantly reduced by both HT and OM, although HT was not directly compared with massage.[17] A study of patient outcomes after Reiki (an energy therapy related to HT), massage, and yoga found no significant differences across the modalities in reducing pain.[18] These studies were all conducted with less than 165 patients. While previous research suggests that both HT and OM are promising integrative therapies, sample sizes have been small, and to the authors' knowledge, none involve directly comparing the effectiveness of HT and OM on cancer-related pain. Furthermore, studies based on recruited samples rather than observational studies of oncology outpatients undergoing routine therapy limit generalizability to clinical practice.

Given the importance of nonpharmacologic pain management and the lack of research establishing the effectiveness of HT compared with OM in managing pain in cancer patients, the purpose of this research was to conduct an effectiveness study that described and compared the rates of clinically significant pain improvement (defined as ≥2-point decrease in pain score) after a single-administration of HT or OM therapy.

Materials and Methods

Study design

The study design was an observational, retrospective, pretest/post-test study of a single therapy session.

Therapy interventions

Both therapies (HT, OM) occurred in an outpatient setting at an academic hybrid, multisite, community-based cancer institute within the Department of Supportive Oncology. Certified and credentialed HT and OM practitioners provided a single session of routine, clinical care therapy for ~45 min and documented therapy techniques in the electronic medical record. Patients were either advised by a healthcare provider to receive therapy or self-referred. Healthcare providers' explanation of the two therapies varied and were customized to the needs and questions raised by the patient. Patients were able to self-select the therapy modality they preferred.

Healing Touch. HT techniques were customized to patient needs. Before administering HT, the practitioner and patient set an intention for the patient's highest good. Then, the practitioner centered, grounded, and connected with the patient's human energy field. Light touch or near-body touch techniques included the following: (1) Magnetic Clearing to clear energetic congestion from the human energy field; (2) Ultrasound to release congestion in the energy field; (3) Mind Clearing to decrease stress and promote relaxation; and (4) The Chakra Connection to connect, open, and balance the energy centers (chakras).

Oncology Massage. OM utilized light Swedish techniques, including effleurage (gliding, rhythmic strokes), petrissage (gentle kneading), and gentle ''energy'' holds to meet individual therapeutic needs. Before therapy, medical conditions were assessed to determine technique modifications. Modifications included alternative positioning (e.g., side lying or seated vs. traditional prone/supine positioning) and additional cushioning to reduce pressure on wounds, tumors, medical devices, and surgical sites.

Data collection and management

From January 5, 2015, to November 22, 2017, a cohesive, consecutive sample of all patients given therapy evaluated their pain before and after receiving a single therapy session of HT or OM on a scale from 0 = *no pain* to 10 = *worst possible pain*. This scale is similar to the validated Edmonton Symptom Assessment System (ESAS-r scale)[19] and permitted as an

informal adaptation by the ESAS-r authors. Data were managed in REDCap, a secure, web-based, electronic data capture tool.[20] Expedited institutional review board approval with consent waiver for retrospective study was secured before data analysis. The retrospective review identified 1,644 HT and 1,504 OM therapy administrations in the data collection period, of which 1,633 HT and 1,497 OM records were complete (i.e., included pre- and post-therapy pain scores and therapy date). The data were restricted to the first therapy visit per patient regardless of modality (411 HT records, 405 OM records) to avoid confounding therapy effects. Patients reporting pretherapy pain <2 were excluded as they could not achieve clinically significant pain improvement (defined as a pain decrease [scaled 0 to 10] ≥2 points)[21]; ~30% of patients (29.2% HT, 30.6% OM) were excluded for this reason. The final total analytic sample of 572 comprised 291 (50.87%) HT and 281 (49.1%) OM observations.

Study endpoints and statistical analyses

This study sought to establish and compare the efficacies of HT and OM therapies in achieving clinically significant pain improvement. Patient, disease, and anticancer treatment characteristics were summarized by therapy, alongside summary statistics of pretherapy and post-therapy pain scores and paired differences. Assessment of select characteristics was performed using chi-square tests; analysis of pain scores and paired differences was performed using paired *t*-tests and analysis of variance techniques. The primary objective was evaluated using logistic regression

Table 1. Patient, Disease, and Treatment Baseline Characteristics ($N=572$)

	Overall sample	*Healing Touch*	*Oncology Massage*	*Chi-square*
	N = *572*	N = *291*	N = *281*	
	n *(%)*	n *(%)*	n *(%)*	p-*Value*
Gender				0.433
Female	335 (58.4)	165 (56.7)	169 (59.9)	
Male	238 (41.5)	126 (43.2)	113 (40.1)	
Age				0.849
<41	67 (11.8)	31 (10.7)	36 (12.9)	
41–60	289 (50.7)	151 (52.1)	138 (49.3)	
61–80	206 (36.1)	104 (35.9)	102 (36.4)	
≥81	8 (1.4)	4 (1.4)	4 (1.4)	
Median [Min, Max]		56 [19, 86]		
Mean (std)		55.8 (12.3)		
Median [Min, Max]		56 [19, 86]		
Mean (std)		55.8 (12.3)		
Treatment type				
Surgery	431 (75.4)	231 (79.4)	200 (71.2)	0.023
Chemotherapy	422 (73.8)	205 (70.5)	217 (77.2)	0.065
Radiation	277 (48.4)	138 (47.4)	139 (49.5)	0.625
Hormone therapy	127 (22.2)	76 (26.1)	51 (18.2)	0.022
No treatment	8 (1.4)	5 (1.7)	3 (1.1)	
Cancer type—breast				0.013
Breast	299 (52.3)	167 (57.4)	132 (47.0)	
Other	273 (47.7)	124 (42.6)	149 (53.0)	
Cancer type				
Breast	299 (52.3)	167 (57.4)	132 (47.0)	
GYN	37 (6.5)	21 (7.2)	16 (5.7)	
Lung	36 (6.3)	19 (6.5)	17 (6.1)	
Multiple myeloma	32 (5.6)	10 (3.4)	22 (7.8)	
Unspecified	32 (5.6)	24 (8.3)	8 (2.9)	
Colon	26 (4.6)	11 (3.8)	15 (5.3)	
Lymphoma	25 (4.4)	8 (2.8)	17 (6.1)	
Head and neck	23 (4.0)	10 (3.4)	13 (4.6)	
Pancreatic	11 (1.9)	4 (1.4)	7 (2.5)	
Brain	10 (1.8)	3 (1.0)	7 (2.5)	
Prostate	9 (1.6)	2 (0.7)	7 (2.5)	
Leukemia	8 (1.4)	2 (0.7)	6 (2.1)	
Bladder	6 (1.1)	2 (0.7)	4 (1.4)	
Gastric	6 (1.1)	2 (0.7)	4 (1.4)	
Melanoma	6 (1.1)	4 (1.4)	2 (0.7)	
Renal	5 (0.9)	2 (0.7)	3 (1.1)	

Totals may not sum to 100% due to rounding and missing responses (two patients missing birth date).

Table 2. Pretherapy, Post-Therapy, and Differences in Discrete Pain Scores ($N=572$)

		Pre-trx	*Post-trx*		
Pain scores	n	*M (SD)*	*M (SD)*	p-*Value*	*Diff*
Healing Touch	291	5.1 (2.2)	2.6 (2.1)	≤0.001*	−2.4 (1.8)
Oncology Massage	281	4.4 (2.2)	2.0 (1.8)	≤0.001*	−2.5 (1.7)

Data are expressed as M (SD).
*$p<0.0083$ was considered statistically significant.
Adjusting for pretherapy pain score.
Diff, difference between pretherapy and post-therapy pain scores; M, mean; Pre-trx, pretherapy pain score; Post-trx, post-therapy pain score; SD, standard deviation.

analysis to estimate the odds of clinically significant pain improvement by modality, adjusting for pretherapy pain score, gender, age, anticancer treatment type (i.e., surgery, chemotherapy, radiation, hormone therapy), and cancer type. Backward elimination was used in logistic regression model selection procedures (significance level <0.05). The model-adjusted rates of pain improvement were estimated through the model at the mean value of pretherapy pain. A subgroup analysis of pain improvement rate in patients presenting with severe pain (≥7 pretherapy pain[22,23]) was performed. Analysis of the primary objective was evaluated at a $p=0.05$ significance level. Statistical analyses of the secondary efficacy objectives were tested at the Bonferroni-corrected two-sided $\alpha=0.0083$ to preserve an overall type I error rate of 0.05. Statistical analyses were performed using SAS, version 14.1.[24]

Results

Characteristics on presentation to therapy

Participants were mostly female (58.4%), breast cancer patients (52.3%), and treated with chemotherapy (73.8%) or surgery (75.4%). Characteristics were largely balanced between the modalities, but HT patients reported higher incidences of surgical treatment ($p=0.023$) and hormone therapy ($p=0.022$) (Table 1).

Average pretherapy pain score on presentation was 4.8, ranging from 2 to 10. HT patients presented with higher pretherapy pain (HT $\bar{x}=5.1$ v. OM $\bar{x}=4.4$; $p<0.001$) and reported higher post-therapy pain as well (HT $\bar{x}=2.6$ v. OM $\bar{x}=2.0$; $p<0.001$). Both HT and OM patients reported statistically significant reductions in numerical pain score (HT $\bar{x}=2.4$, $p<0.001$; OM $\bar{x}=2.5$, $p<0.001$) (Table 2).

Comparing HT and OM

Clinically significant pain improvement. More than 69% of patients reported immediate clinically significant pain improvement (i.e., reduction in pain score of ≥2 points), yet the duration of pain relief was unknown. Rates were similar between the modalities (HT 0.68 v. OM 0.71 [odds ratio (OR) = 1.14, 95% confidence interval (CI) (0.80–1.63); $p=0.471$]) (Table 3). In fitting a multivariate model estimating the odds of pain improvement and including factors of pretherapy pain score, gender, age, anticancer treatment type, and cancer type, backward elimination resulted in a singular independent predictor, pretherapy pain score. Based on this reduced model, when adjusted for pretherapy pain score, OM was associated with increased odds of clinically significant pain improvement (OR = 1.49, 95% CI [1.02–2.19]; $p=0.041$). The model-predicted probabilities of pain improvement from this reduced model were more disparate than unadjusted (HT = 0.68, OM = 0.76) (Table 3).

Subset analysis in patients presenting with severe pain. The previous analyses were re-estimated in a subset of 142 (24.8%) patients with severe pretherapy pain only (i.e., pain score of 7–10). HT, 28.2%, and OM, 21.4%, patients presented with severe pretherapy pain ($p=0.059$). The rates of clinically significant pain improvement were 0.82 in HT and 0.88 in OM. When adjusted for pretherapy pain akin to the modeling above, there was no significant difference in odds of clinically significant pain improvement between HT and OM for patients with severe pain (OR = 1.81, 95% CI [0.68–4.83]; $p=0.236$) (Table 4).

Discussion

The study purpose was to compare the effectiveness of HT versus OM in pain improvement in a sample of diverse cancer patients undergoing routine clinical care. To the authors' knowledge, this study is the first with a sample size greater than 165 patients to compare the two integrative modalities focusing on pain outcomes. More than 69% of patients reported clinically significant pain improvement in

Table 3. Summary of Results of Clinically Significant Pain Improvement Adjusted for Pretherapy Pain Score ($N=572$)

Factor	*Unadjusted rate of clinically significant pain improvement*	*OR (95% CI)*	p-*Value*	*Model-adjusted rate of clinically significant pain improvement (evaluated at mean pretherapy pain score)*
Modality				
Healing Touch	0.68	*ref.*		0.68
Oncology Massage	0.71	1.49 (1.02–2.19)	0.041*	0.76
Pretherapy pain score		1.44 (1.30–1.60)	<0.001*	

Data are expressed as OR (95% CI).
*$p<0.05$ was considered statistically significant.
OR, odds ratio; CI, confidence interval.

Table 4. Subgroup Analysis of Patients with Severe (Scores 7–10) Pretherapy Pain: Rates of Clinically Significant Pain Improvement and Odds of Pain Improvement, Adjusted for Pretherapy Pain Score ($N = 142$)

Factor	*Unadjusted rate of clinically significant pain improvement*	*OR (95% CI)*	p-*Value*
Modality			
Healing Touch	0.82	*ref.*	
Oncology Massage	0.88	1.81 (0.68–4.83)	0.236
Pretherapy pain score		0.71 (0.45–1.12)	0.150

Data are expressed as OR (95% CI).
$p < 0.0083$ was considered statistically significant.
OR, odds ratio; CI, confidence interval.

one therapy session, and results suggested that both HT and OM achieved immediate pain improvement after one therapy session. However, it is unknown how long pain improvement might last. OM was associated with increased odds of pain improvement, independent of pretherapy pain score. Interestingly, patients who received HT presented with higher mean pretherapy pain than OM, and reported experiencing higher pain scores directly following therapy. There were no statistically significant differences in clinically significant pain improvement in patients with severe pretherapy pain. The authors speculate that patients in greater pain may self-select HT as opposed to OM. HT's light touch and touch-free modifications may be perceived to be more comfortable than OM's direct muscle manipulation.

These findings bolster previous research suggesting that both[17] HT[9,11] and massage[12,13,25,26] effectively reduce pain in cancer patients. Shalom-Sharabi et al.[27] demonstrated that integrative medicine reduced the use of nonopioid analgesics in cancer patients, thereby reducing the cost of supportive care. Further study is needed, yet this study's findings suggest HT and OM are both helpful for pain improvement. This study achieves valuable scientific insights, yet its limitations must be considered. The length of time the pain relief was observed was from a pretherapy to posttherapy time frame of $\sim$45 min, and it is unknown if pain relief persisted past these immediate improvements. The nature of HT and OM is such that modifications are unique to each patient's needs without a uniform therapy experience. Therapy was provided by highly experienced, licensed, and credentialed practitioners. Therefore, results may not generalize to other HT and OM therapy settings. The observational, retrospective design did not allow randomization of patients to therapy modality, and underlying unknown variables exist in patient self-selection between the therapies. It was also unable to control for potential confounding patient characteristics and medical history (e.g., cancer stage, use of OTC analgesics and/or opioids, patient expectation for pain relief) Instead, the study observed therapy results in a cohesive, consecutive, diverse population of cancer patients in a standard, nonexperimentally manipulated clinical environment.

This study raises important inquiries for further study, including exploration of patient attitudes toward HT compared with OM, and how attitudes may differ among patients with varied pain levels. In addition, future research to assess the longevity of pain improvement across both modalities endures, and the optimal number of treatment sessions for lasting pain relief is warranted. HT and OM meet NCCN and ASCO guidelines for nonpharmacologic pain management, and are useful options for some patients who wish to use integrative therapies for pain management.

Conclusions

Pain is one of the most distressing side effects of cancer and its associated treatments.

This study compared the immediate effectiveness of HT and OM on pain in the largest-yet sample of diverse oncology patients after one routine clinical session. Both HT and OM significantly reduced pain score and yielded clinically significantly pain improvement, although the duration of pain relief was unknown. OM was associated with increased odds of clinically significant pain improvement when controlling for pretherapy pain. In patients with severe pretherapy pain, the odds of clinically significant pain improvement between HT and OM were not significantly different. These findings represent noteworthy contributions to the field of IO and study of pain management with integrative therapies by demonstrating that both HT and OM provided immediate pain relief after a single therapy session in a large, diverse routine clinical care patient population. Future research should examine the longevity of the pain-reducing benefits of HT and OM observed in this study. These integrative therapies offer few side effects, enjoy high acceptance among patients,[28] and meet NCCN and ASCO guidelines for nonpharmacologic pain management options.[4,5]

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No competing financial interests exist for any of the authors.

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