

Effect of reiki on people with advanced cancer: a randomized controlled trial

Abstract

Introduction: Reiki is an Integrative and Complementary Health Practice (PICS), recognized and incorporated into the table of procedures of Brazil's Unified Health System (SUS).

Objective: To evaluate the effects of applying Reiki in relieving the symptoms of people with advanced cancer who are hospitalized.

Methodology: Randomized controlled study, approved by the Research Ethics Committee, to verify the effect of applying Reiki to people with advanced cancer, admitted to a large, highly complex university hospital located in the interior of the state of São Paulo, Brazil. Fourteen participants were selected from the clinical oncology ward and randomly divided into two groups - Reiki and control - with seven participants each. For data collection, an anamnesis was taken, blood pressure and heart rate were measured, saliva was collected to check cortisol levels; the *Edmonton Symptom Assessment System (ESAS)*, Hospital Anxiety and Depression Scale (HAD-S) and *Karnofsky Performance Status (KPS)* were applied; Reiki was applied for 21 minutes to participants in the Reiki group and, 30 minutes after Reiki, the scales were reapplied and salivary cortisol was collected again.

Results: The Mann-Whitney U-test showed a statistically significant difference for the sleep variable ($p < 0.007$) in the intervention group when compared to the control group.

Conclusion: The results showed that Reiki improved the sleep of the participants in this randomized controlled trial and demonstrated that, despite the small caseload, the methodology used is valid for studying the impact of Reiki on the symptoms of people with advanced cancer.

Keywords: therapeutic touch. complementary therapies. neoplasms. palliative care. signs and symptoms. public health

Volume 17 Issue 4 - 2024

Sabrina de Freitas Souza,¹ Mariana Lopes Borges,² Marysia Mara Rodrigues do Prado De Carlo³

¹Occupational Therapist, Master's Degree from the Public Health Nursing Program at EERP-USP, Ribeirão Preto, SP, Brazil

²Contract Professor III, Ribeirão Preto Nursing School, University of São Paulo - EERP-USP, Ribeirão Preto, SP, Brazil

³Associate Professor, Full Professor, Ribeirão Preto Medical School and Postgraduate Program in Public Health Nursing, Ribeirão Preto Nursing School, both at the University of São Paulo, Brazil

Correspondence: Marysia Mara Rodrigues do Prado De Carlo, Associate Professor, Full Professor, Occupational Therapy Course, Department of Health Sciences - Ribeirão Preto Medical School, University of São Paulo, Rua Miguel Covian, 120 - Campus da USP - Monte Alegre - Ribeirão Preto-CEP 14049-900, Brazil, Tel (16) 3315-0747 (USP), Email marysia@fmrp.usp.br

Received: August 05, 2024 | **Published:** August 22, 2024

Abbreviations

CEP, research ethics committee; PC, palliative care; ESAS-BR, edmonton symptom assessment system - Brazil; HR, heart rate; HADS, hospital anxiety and depression scale; KPS, karnofsky performance status; MOH, ministry of health, WHO, world health organization; BP, blood pressure; PICS, integrative and complementary health practices; PNPICS, national policy for integrative and complementary health practices; ANS, autonomic nervous system; CNS, Central Nervous System; SUS, unified health system; ICF, informed consent form; UBS, basic health units

Introduction

The National Policy for Integrative and Complementary Health Practices (PNPICS) was implemented by the Brazilian Ministry of Health (MS) in 2006, regulating the use of Integrative and Complementary Health Practices (PICS) in the Unified Health System.¹ Since then, the number of services and establishments providing some kind of PICS has increased considerably every year. PICS are present in almost 54% of Brazilian municipalities. Also according to the Ministry of Health, in 2016, among the 9,350 health establishments in the country, considering primary care and medium and high complexity services, 56% offered individual and collective care in PICS. In 2017, the Ministry of Health found that 8,239 Basic Health Units (BHUs) in 3,117 municipalities offered some form of PICS, which involved more than 5 million people and made Brazil a world reference in the field of PICS in Primary Care (PC).²

Reiki is a healing and wellness practice that promotes balance and well-being in body, mind and spirit. Reiki is a complementary or integrative modality used in conjunction with conventional medicine, not in place of it.³ Through the laying on of hands, the therapist channels universal and vital energy to the patient; the energy is directed to the main etheric chakras, with the intention of stimulating the natural homeostasis restoration and, consequently, achieving physical, emotional, mental and spiritual balance.⁴ Reiki therapy can be used both in the prevention, promotion and rehabilitation of health and within a palliative care (PC) program, by a practitioner with level II therapeutic training. According to the World Health Organization (WHO), PC is a human right to health, which helps to prevent and alleviate suffering through early diagnosis of the disease, impeccable assessment and treatment of physical, psychosocial or spiritual problems, helping patients to live as actively as possible until death.⁵ People with advanced diseases, in PC, generally report a high burden of symptoms, which potentially affects their quality of life; distressing symptoms can be related to both the disease and the adverse effects of treatment.⁶ PICS are low-cost, non-pharmacological interventions that can help in the treatment of people with cancer. Patients, families and caregivers can choose to include PICS in their treatment, especially at end-of-life care, when conventional therapies do not provide adequate symptom relief or produce additional adverse effects. This can result in both improved quality of life and a reduction in unnecessary medical interventions and unplanned hospitalizations.^{7,8}

Systematic literature review articles, such as those presented below, have been published with the aim of evaluating the evidence

available in the literature on the effect of Reiki on different clinical conditions. Avci and Gün (2023) sought to determine the effect of Reiki on pain applied to cancer patients. They concluded that the application of Reiki had a positive effect on pain management in cancer patients.⁹ Bayülgen's (2024) study aimed to investigate the effect of Reiki on fatigue symptoms in cancer patients. In an analysis of five selected studies, it concluded that Reiki applied to cancer patients reduced fatigue, while being effective in relieving pain and stress and improving quality of life.¹⁰ The study by Jahantigh et al.¹¹ aimed to review the effect of Reiki therapy on pain control, anxiety and stress.¹¹ Twenty-three clinical trials were analyzed and the authors concluded that the use of complementary therapies, including Reiki therapy, has different results in different people making it necessary to carry out new research in different countries to evaluate its effectiveness. Another systematic review aimed to identify the benefits of Reiki in mental health care. Despite the fact that only 11 articles were included, the results indicated the potential beneficial role of Reiki in mental health care.¹² McManus (2017) analyzed clinical studies on Reiki to determine whether there is evidence that Reiki provides more than just a placebo effect. Of the thirteen adequate studies, eight demonstrated that Reiki is more effective than placebo, four found no difference but had questionable statistical resolving power, and only one provided clear evidence of no benefit. Viewed collectively, these studies provide reasonably strong support for Reiki being more effective than placebo.¹³

In the context of Women's Health, the study by Borges (2024) found that the clinical outcomes were promising.¹⁴ Reiki contributed to anxiety reduction, success in the pregnancy rate and reduction of stress factors in infertile women in the treatment of infertility in Assisted Reproduction. More women who received Reiki became pregnant than participants in the placebo and control groups and showed greater control or reduction of factors that negatively influence treatment. The aim of this study was to evaluate the effects of reiki in relieving the symptoms of people with advanced cancer who were admitted to a highly complex public university hospital. Different forms of assessment were carried out, including measuring blood pressure and heart rate, applying scales to assess symptoms such as anxiety and depression and collecting salivary cortisol. It was verified whether there are statistically significant differences between people who receive Reiki together with conventional palliative care compared to people who only receive palliative care.

Material and methods

Study Design: This is a Randomized Controlled Clinical Trial, with the application of Reiki to hospitalized cancer patients. The sample consisted of 14 participants of both sexes, aged over 18, with a clinical diagnosis of cancer.

Study Setting: Data collection took place in February and March 2020, in the Clinical Oncology ward of a highly complex, large public hospital located in a city in the interior of the state of São Paulo, Brazil.

Ethical aspects: The study was approved by the Ethics and Research Committee (CEP) of the Ribeirão Preto Nursing School of the University of São Paulo and also by the CEP of the Hospital das Clínicas-FMRP/USP (project opinion number: 3.449.547 and amendment opinion number: 3.985.230 dated: 27/02/20), and with the signing of the free and informed consent form (TCLE) by all participants involved.

Sample calculation: To carry out the sample calculation, the following parameters of interest were considered: significance level of 5% ($\alpha = 0.05$), test power of 95% ($1 - \beta = 0.95$), Small Effect Size (0.20), the presence of 2 groups (Control and Reiki), 4 Cortisol assessments (2 daily for 2 days). A correlation between measurements of 0.10 was assumed. The program used for the analyses was GPower (Version 3.1.7.).¹⁵

Eligibility criteria: We selected people of both sexes, over 18 years of age, diagnosed with cancer and expected to be hospitalized for 2 days or more; they were evaluated and cognitively oriented according to the professionals on the clinical team. People with Central Nervous System (CNS) tumors, Karnofsky Performance Status (KPS) below 30% or neurological sequelae who had undergone recent surgery were excluded. Participants who discontinued the application of Reiki during the study and who did not agree and/or did not follow the recommendations for the collection of material for the analysis of salivary cortisol levels were discontinued from the study.

Randomization: The participants were divided into 2 groups - Reiki and Control - and were randomized before starting the study using a randomization list generated by the R program, permuted in equal proportions in the 2 groups.¹⁶ During the study period, 93 participants were recruited, of whom 62 were excluded because they did not meet the study's eligibility criteria, 4 were excluded because of the criteria for discontinuing the study and 9 refused to take part. The final sample consisted of 14 patients, as shown in Figure 1.

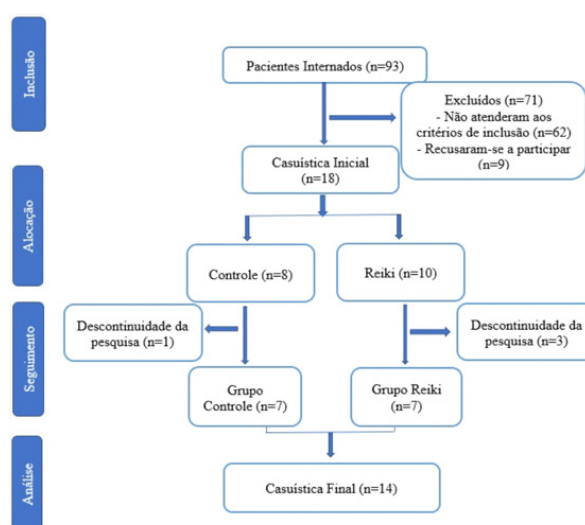


Figure 1 Flowchart of the procedures for inclusion, allocation, follow-up and analysis of the study sample (n=14). Ribeirão Preto, SP, Brazil, 2020.

Data collection procedures: Data collection took place over two days, always in the afternoon, respecting the same times for both collections. On the first day, the informed consent form was signed and an anamnesis was taken. On both collection days, the procedures were carried out in the following sequence: blood pressure (BP) and heart rate (HR) were measured, the *Edmonton Symptom Assessment System* (ESAS-BR) and the Hospital Anxiety and Depression Scale (HADS) were applied, saliva was collected using the salivette® and Reiki was applied for 21 minutes to the patients who were selected for this treatment. After 30 minutes of Reiki application, the ESAS-BR and HADS scales were reapplied, as well as measuring BP, HR and collecting saliva to check the level of salivary cortisol.

For the patients who were not selected to receive Reiki, a 50-minute interval was given between the initial collection and the final collection. At the end of the second day, the participants who were in the control group and who had not received the treatment during the research collection were offered Reiki. Reiki was applied by the researcher, who is a reiki practitioner trained to level 3 in the Usui method. During the application of Reiki, the patients lay on their own beds in the supine position. The treatment consisted of the reiki therapist laying hands for 3 minutes on each part of the participant's body, over clothing and without direct touch, including the areas around the head, eyes, chest and hips; the procedure was guided by music suitable for Reiki, which has chimes every 3 minutes.

Data analysis: For statistical analysis of the data collected, the Mann-Whitney U-test was used both for comparison between groups and to analyze the changes observed at the two moments (before and after each session) in relation to the measurement of blood pressure, heart rate and salivary cortisol levels. Continuous variables were expressed as mean, median and standard deviation. A descriptive analysis of the results obtained in the anamnesis was carried out to characterize the sociodemographic and clinical characteristics of the sample. We used the recommended values for each of the scales used and a non-parametric test applied to two independent samples. A value of $p < 0.05$ was defined as statistically significant.

Salivary cortisol levels were analyzed before and after each intervention on both days. There was no statistically significant difference or correlation between the control and Reiki groups in these categories. However, cortisol concentration levels showed a tendency to decrease after the Reiki sessions. As for functionality, measured by the KPS of the participants in the current study, the average was 70-80% (median 80% in both groups), with a standard deviation of ± 13.80 in the control group and ± 11.55 in the Reiki group. This result indicated a good level of functionality and group homogeneity in this parameter. In the control group, the lowest KPS value found was 50%

Table 2 Distribution of the mean, median and standard deviation of the ESAS-BR values on each collection day, in the control and reiki groups (N=14), Ribeirão Preto, SP, Brazil, 2020

Variable	Control group			Reiki group			P Value	
	Average	Median	Standard deviation	Average	Median	Standard deviation		
Pain	Day 1	1,14	0,00	$\pm 2,04$	3,29	5,00	$\pm 3,25$	0,259
	Day 2	0,71	0,00	$\pm 1,25$	2,29	0,00	$\pm 3,73$	0,535
	Diff. D1/D2	0,43	0,00	$\pm 1,62$	1,00	0,00	$\pm 2,31$	0,710
Tiredness	Day 1	2,71	1,00	$\pm 3,35$	2,00	0,00	$\pm 3,83$	0,383
	Day 2	2,29	0,00	$\pm 3,86$	1,43	0,00	$\pm 3,78$	0,456
	Diff. D1/D2	0,43	0,00	$\pm 3,69$	0,57	0,00	$\pm 1,51$	1,000
Nausea	Day 1	0,29	0,00	$\pm 0,76$	2,00	0,00	$\pm 3,42$	0,620

Results

The clinical and sociodemographic characteristics of the participants are shown in Table 1 below.

Table 1 Characterization of the sociodemographic data of the study participants (N=14), Ribeirão Preto, SP, Brazil, 2020

Features	N	%	
Age	14	100	
Sex	Male	7	50
	Female	7	50
Marital status	Single	5	35,6
	Married	8	57,3
	Widowed	1	7,1
Children	14	100	
Religion	Catholicism	8	57,3
	Jehovah's Witness	1	7,1
	Evangelical	1	7,1
	Christian	2	14,3
	Umbanda	1	7,1
	No religion	1	7,1
Education	Elementary school incomplete	6	42,9
	Elementary School Completed	2	14,3
	Completed high school	5	35,7
	University degree completed	1	7,1

The average age of the 14 participants in the study was 51.3 years (± 17.1) and the average number of children was 2.3 per participant. There was a prevalence of married, Catholic people with an average age of 51.3 years (± 17.1). There was a diversity of clinical diagnoses, without the prevalence of any type of cancer. The following were identified: Adenocarcinoma of the Stomach (N=1); Ewing's Sarcoma (N=2); Adenocarcinoma of the Cervix (N=2); Adenocarcinoma of the Rectum (N=2); Adenocarcinoma of the Cardia (N=1); Adenocarcinoma of the Colon (N=3); Squamous Cell Carcinoma of the Tongue (N=1); Adenocarcinoma of the Pancreas (N=1) and Leiomiosarcoma of the Sternum (N=1).

and the highest was 90%, while in the Reiki group the lowest value was 60% and the highest was 90%.

Symptoms of anxiety and depression were assessed using the HADS scale, but no statistically significant difference was found.

Table 2 below shows the data from the ESAS-BR scale representing the mean, median and standard deviation of the symptoms of pain, tiredness, nausea, sadness, anxiety, drowsiness, appetite, well-being, shortness of breath and sleep. The variable that showed a statistically significant difference between the Control and Reiki Groups was sleep ($P=0.007$).

Table 2 Continued..

Variable		Control group			Reiki group			P Value
		Average	Median	Standard deviation	Average	Median	Standard deviation	
Sadness	Diff. D1/D2	-0,43	0,00	±2,15	0,57	0,00	±3,05	0,902
	Day 1	2,57	3,00	±2,76	3,71	2,00	±4,19	0,710
	Day 2	1,86	0,00	±3,29	1,86	0,00	±3,76	1,000
Anxiety	Diff. D1/D2	0,71	0,00	±1,60	1,86	0,00	±2,73	0,456
	Day 1	5,29	5,00	±3,04	4,43	5,00	±2,51	0,535
	Day 2	5,29	7,00	±3,86	4,29	4,00	±3,04	0,805
Drowsiness	Diff. D1/D2	0,00	0,00	±1,73	0,14	0,00	±2,34	1,000
	Day 1	4,71	5,00	±3,15	2,86	2,00	±3,18	0,318
	Day 2	4,86	5,00	±3,24	1,29	0,00	±2,21	0,530
Appetite	Diff. D1/D2	-0,14	-1,00	±1,57	1,57	0,00	±3,55	0,318
	Day 1	3,14	4,00	±3,18	3,43	2,00	±3,99	0,902
	Day 2	3,71	5,00	±2,69	2,71	2,00	±3,59	0,318
Well-being	Diff. D1/D2	-0,57	0,00	±2,07	0,71	0,00	±1,25	0,383
	Day 1	1,57	0,00	±2,07	2,86	3,00	±3,08	0,456
	Day 2	3,29	3,00	±2,93	2,14	1,00	±3,58	0,383
Lack of air	Diff. D1/D2	-1,71	0,000	±3,82	0,71	0,00	±2,36	0,259
	Day 1	0,00	0,00	±0,00	0,86	0,00	±1,46	0,383
	Day 2	0,00	0,00	±0,00	0,14	0,00	±0,38	0,710
Sleep	Diff. D1/D2	0,00	0,00	±0,00	0,71	0,00	±1,25	0,383
	Day 1	1,86	1,00	±1,12	4,71	5,00	±3,64	0,165
	Day 2	3,71	3,00	±3,86	1,57	0,00	±2,15	0,318
	Diff. D1/D2	-1,86	-2,00	±2,04	3,14	2,00	±3,85	0,007*

*Statistical significance ($p < 0.05$).

Diff. D1/D2 = the Difference between day 1 and day 2

There were no reports from the participants of damage or adverse effects or unwanted symptoms as a result of the application of Reiki, which was well accepted by the patients, even though most of them had no previous knowledge of the technique.

Discussion

People with intermediate (as in the case of the participants in this study, who had an average KPS of 80%) and low KPS scores have a lower survival rate compared to those with high KPS scores. KPS correlates positively with chemotherapy response, chemotherapy tolerability, survival and quality of life in cancer patients.^{17,18} An important aspect to be discussed in relation to the application of Reiki is its impact on stress levels. According to Rosch, the physiological system sensitive to energy-based therapies is the Autonomic Nervous System (ANS), which is involved in the physiological response to stress.¹⁹ For this reason, salivary cortisol was collected in the current study, but no statistically significant differences were observed in relation to these results. A study carried out on 35 healthy psychology students found a substantial increase in stress over the course of the academic year for students in the group that did not receive Reiki, when compared to the group that did receive Reiki, in which a trend towards an almost significant comparative reduction in stress symptoms was observed.²⁰ Two other studies evaluated salivary cortisol levels with the application of Reiki: one evaluated 21 health professionals with Burnout Syndrome and the other 23 healthy participants who underwent a 30-minute Reiki experience; in both, no statistically significant results were found involving the salivary cortisol test.^{21,22} Another study verified the effect of Reiki on the stress levels of 42 caregivers of cancer patients; no significant difference was found in relation to cortisol levels in saliva.²³

Therefore, the above findings in the literature suggest biochemical and physiological changes in the direction of relaxation with the application of Reiki, but there are methodological limitations in the studies identified, which have small caseloads, ranging from 10 to 42 participants, with varying forms of saliva collection for the assessment of cortisol. Further studies are needed for a more complete understanding of the mechanisms of effect of the Reiki technique on stress related to cancer illness and treatment, in order to obtain more scientific evidence and verify results with control of biological markers.^{21–23} Among the effects of the application of Reiki on the ANS, significant decreases in heart rate (HR) were observed when compared to the placebo group or to people who did not receive Reiki.^{21–24} The application of Reiki also decreased diastolic blood pressure (BP) values, with statistically significant results.^{23–27} In the current study, although no statistically significant differences were found in BP and HR, it was possible to observe that there was a downward trend in the values of these parameters in the Reiki group when compared to conventional treatment.

Reiki improved the pain ratings of people with cancer when compared to other PICS, such as massage, yoga and guided imagery.^{28,29} In a study of 118 cancer participants at any stage of disease progression and receiving any type of chemotherapy, it was observed that Reiki improved well-being, relaxation, pain relief, sleep quality and reduced anxiety in those receiving the treatment; the authors reported that offering Reiki therapy in hospitals can meet the physical and emotional needs of participants, particularly in patients with advanced cancer.³⁰ A study of 156 patients showed that acupressure or Reiki intervention reduced levels of pain and fatigue in stage III and IV cancer patients in palliative care.³¹ Several other studies on pain, anxiety, fatigue and nausea in people with cancer in

different contexts, such as before and after chemotherapy infusion, have shown that Reiki leads to an improvement in these symptoms, as well as improving quality of life, comfort and well-being.^{32–35} Reiki therapy is useful for relieving pain, reducing anxiety and depression and improving the quality of life of patients in palliative cancer care. Reiki sessions of 30 minutes were found to be useful for improving well-being, relaxation, pain relief, sleep quality and reducing anxiety in people with cancer.³⁶

The results of the current study are consistent with small clinical trials in which Reiki was associated with improvements in well-being and pain relief. Although the current study showed no change in pain perception, several studies have pointed to the effectiveness of Reiki in pain management in patients with cancer and other chronic diseases, as well as being an effective modality for improving anxiety and depression.^{37–40} In addition to reducing anxiety and pain, Reiki can improve other symptoms such as sleep disturbances, fatigue, nausea and depressive symptoms, strengthening general well-being.³¹ Sleep disturbances can cause alterations in the circadian rhythm and lead to a stress response with the release of cortisol, increased rates of anxiety and depression, mood swings, impaired daytime functioning, an increased risk of falls, as well as concentration and memory problems, which in turn can contribute to the progression of cancer.^{40,41} Older people with cancer who have insomnia have a 15% higher rate of musculoskeletal disorders and gastrointestinal symptoms.⁴⁰ Regular use of sleep medications has contributed to problems with performing activities of daily living, including personal hygiene, dressing and eating, and higher levels of anxiety and depression. These adverse consequences of insomnia can create challenges in adhering to cancer treatment, with a higher rate of adverse events related to drug interactions and increased mortality.⁴¹

The current study found a statistically significant difference in sleep improvement ($p=0.007$) in people who received Reiki compared to conventional treatment. This finding shows that the application of Reiki can improve the quality of sleep of people in palliative care, which was corroborated by the results of a pilot study on non-pharmacological sleep interventions; it found an improvement in sleep quality and the importance of conducting studies with low-cost, non-invasive resources in hospital settings.⁷ Based on the results presented in both the literature and the current study, Reiki can be recommended as a treatment or practice that enables people with cancer to improve their holistic health, safely and at low cost. It can be offered as part of wellness programs in health services and in the SUS, to assist not only sick people, but also family members, caregivers and the health team itself.

Limitations of the study

This randomized controlled clinical study has limitations due to the difficulty in controlling variables and treatment complications. In the time between Reiki applications, the participants continued to receive other forms of cancer treatment and care which may have altered the results, especially in emotional aspects. As this was a study of people with advanced cancer, in palliative care and often physically and emotionally fragile, the number of Reiki applications was limited. For better outcomes, more Reiki sessions are needed, sequentially and lasting at least 15 minutes. The application of Reiki therapy does not require environmental modifications, which allows it to be carried out in the hospital bed itself, reducing the impact on the participant's routine and that of the hospital staff. However, the time taken to apply the technique must be determined in relation to the particularities of each person and the context in which they find themselves, so as not to overload the participants; the time and number of questions

asked in the data collection was a factor in some people's refusal and discontinuation of participation in the current research.

Due to the COVID-19 pandemic at the time of data collection, due to biosafety and social distancing regulations and the fact that the participants were immunosuppressed patients and in the risk group for COVID-19, the sample size was reduced and the final number was 14 participants. Despite the limited number of participants, the results showed positive effects of the application of Reiki therapy - it improved participants' sleep when compared to the control group - for people in oncology palliative care. Despite the wide range of PICS available to the Brazilian population, there is still a lack of strong and sufficient scientific evidence to support their use. In order to obtain better scientific evidence on the benefits of Reiki therapy for people with cancer symptoms and in palliative care, it is recommended to carry out new randomized clinical trials consistent with the application of the established methodology in a controlled manner, with a greater number of participants and Reiki sessions, with standardized protocols.

Conclusion

This study provided input for future studies on the application of Reiki to people with advanced cancer admitted to a high-complexity hospital. The theoretical basis and the results achieved demonstrated the feasibility of applying Reiki therapy to cancer patients and its clinical, scientific and social relevance, since Reiki is a low-cost, short-time auxiliary treatment that has the potential to improve the symptoms of people undergoing cancer care, particularly sleep disorders.

Acknowledgments

We would like to thank the entire team of doctors and nurses who made the collections possible at the HCRP and all the people who donated and took part in the *crowdfunding* and made this research possible.

Authors' Contribution

¹Conception of the research project, planning, data collection, analysis and interpretation of the results and writing of the manuscript.

²Interpretation of results, revision of the manuscript.

³Conception and orientation of the research project, planning, analysis and interpretation of the results, revision of the manuscript.

Conflicts of interest

The authors declare that there are no conflicts of interest that could have interfered with the impartiality of this scientific work.

References

1. Brazil. Ministry of Health. *National Health Council. Portaria GM nº 971*. 2006.
2. Brazil. Ministry of Health. *Integrative and Complementary Health Practices Thematic Glossary Ministry of Health Executive Secretariat. Secretariat of Health Care Translation of Terms into Spanish-English Health Terminology Project*. 2018.
3. Lipinski K, Van De Velde J. Reiki: Defining a Healing Practice for Nursing. *Nurs Clin North Am*. 2020;55(4):521–536.
4. Freitag VL, Dalmolin IS, Badke MR, et al. Benefits of Reiki in older individuals with chronic pain. *Text Context Nursing, Florianópolis*. 2014;23(4):1032–1040.

5. World Health Organization (WHO). *Palliative Care. Key facts*. 2018.
6. Zeng YS, Wang C, Candidate P, et al. Complementary and Alternative Medicine in Hospice and Palliative Care: A Systematic Review. *J Pain Symptom Manage*. 2018;56(5):781–794.e4.
7. Santos MA, Conceição AP, Ferretti Rebutini REL, et al. Non-pharmacological interventions for sleep and quality of life: a randomized pilot study. *Rev Lat Am Enfermagem*. 2018;26:e3079.
8. Cohen J. *Statistical Power Analysis for the Behavioral Sciences*. 2nd edn. 1988.
9. Avci Abdullah. Gün Meral. The Effect of Reiki on Pain Applied to Patients With Cancer: A Systematic Review. *Holist Nurs Pract*. 2023;37(5):268–276.
10. Bayülgen Melek Yeşil. The Effect of Reiki on Fatigue Symptoms of Cancer Patients: A Systematic Review. *Holist Nurs Pract*. 2024.
11. Jahantigh MR, Jahantigh Haghighi M, Jahantigh Haghighi M, et al. The Effect of Reiki Therapy on Pain Control, Anxiety, Stress: A Systematic Review of Clinical Trial Studies. *CMJA*. 2021;11(2):140–153.
12. Morero Juceli Andrade Paiva, Pereira Sandra de Souza, Esteves Rafael Braga, et al. Effects of Reiki on Mental Health Care: a Systematic Review. *Holist Nurs Pract*. 2021;35(4):191–198.
13. McManus DE. Reiki Is Better Than Placebo and Has Broad Potential as a Complementary Health Therapy. *J Evid Based Complementary Altern Med*. 2017;22(4):1051–1057.
14. Borges Mariana Lopes. *Effect of Reiki on reducing anxiety, gestational success and stress in infertile women undergoing assisted reproduction: a randomized controlled trial*. Thesis (Doctorate in Public Health Nursing) - Ribeirão Preto School of Nursing. University of São Paulo, Ribeirão Preto. 2024.
15. Faul F, Erdfelder E, Buchner A, et al. Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behav Res Methods*. 2009;41(4):1149–1160.
16. R Core Team. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing. Vienna. Austria. 2018.
17. Inno A, Russo GL, Matteo S, et al. The evolving landscape of criteria for evaluating tumor response in the era of cancer immunotherapy: From Karnofsky to iRECIST. *Tumori*. 2018;104(2):88–95.
18. Thuluvath PJ, Thuluvath AJ, Savva Y. Karnofsky performance status before and after liver transplantation predicts graft and patient survival. *J Hepatol*. 2018;69(4):818–825.
19. Rosch PJ. Bioelectromagnetic and subtle energy medicine: The interface between mind and matter. *Ann N Y Acad Sci*. 2009;1172:297–311.
20. Bowden D, Goddard L, Gruzelier J. A randomized controlled single-blind trial of the effects of Reiki and positive imagery on well-being and salivary cortisol. *Brain Res Bull*. 2010;81(1):66–72.
21. Wardell DW, Engebretson J. Biological correlates of reiki touch (Service mark) healing. *J Adv Nurs*. 2001;33(4):439–445.
22. Díaz Rodríguez L, Arroyo Morales M, Fernández de las Peñas C, et al. Immediate effects of reiki on heart rate variability, cortisol levels, and body temperature in health care professionals with burnout. *Biol Res Nurs*. 2011;13(4):376–382.
23. Yüce UO, Tasci S. Effect of Reiki on the stress level of caregivers of patients with cancer: Qualitative and single-blind randomized controlled trial. *Complement Ther Med*. 2021;58:102708.
24. Demir M, Can G, Kelam A, et al. Effects of distant Reiki on pain, anxiety and fatigue in oncology patients in Turkey: A pilot study. *Asian Pac J Cancer Prev*. 2015;16(12):4859–4862.
25. Woods DL, Dimond M. The Effect of Therapeutic Touch on Agitated Behavior and Cortisol in Persons with Alzheimer’s disease. *Biol Res Nurs*. 2002;4(2):104–114.
26. Mackay N, Hansen S, McFarlane O. Autonomic nervous system changes during Reiki treatment: A preliminary study. *J Altern Complement Med*. 2004;10(6):1077–1081.
27. Baldwin AL, Wagers C, Schwartz GE. Reiki improves heart rate homeostasis in laboratory rats. *J Altern Complement Med*. 2008;14(4):417–422.
28. Rosenbaum MS, Velde J. The effects of yoga, massage, and Reiki on patient well-being at a cancer resource center. *Clin J Oncol Nurs*. 2016;20(3):E77–E81.
29. Buyukbayram Z, Saritas SC. The effect of Reiki and guided imagery intervention on pain and fatigue in oncology patients: A non-randomized controlled study. *Explore (NY)*. 2021;17(1):22–26.
30. Birocco N, Guillame C, Storto S, et al. The Effects of Reiki Therapy on Pain and Anxiety in Patients Attending a Day Oncology and Infusion Services Unit. *Am J Hosp Palliat Care*. 2012;29(4):290–294.
31. Utli H, Dinç M, Utli MDA. The effect of acupuncture or reiki interventions on the levels of pain and fatigue of cancer patients receiving palliative care: A randomized controlled study. *Explore (NY)*. 2023;19(1):91–99.
32. Catlin A, Taylor Ford RL. Investigation of Standard Care Versus Sham Reiki Placebo Versus Actual Reiki Therapy to Enhance Comfort and Well-Being in a Chemotherapy Infusion Center. *Oncol Nurs Forum*. 2011;38(3):E212–220.
33. Fleisher KA, Mackenzie ER, Frankel ES, et al. Integrative Reiki for cancer patients: A program evaluation. *Integr Cancer Ther*. 2014;13(1):62–67.
34. Barbara BN, Carol F, Ruth AM. Reiki’s effect on patients with total knee arthroplasty: A pilot study. *Nursing*. 2016;15(2):17–23.
35. Utli H, Dogru BV. The Effect of Reiki on Anxiety, Stress, and Comfort Levels before Gastrointestinal Endoscopy: A Randomized Sham-Controlled Trial. *J PeriAnesth Nurs*. 2023;38(2):297–304.
36. Billot M, Maeva D, Chantal W, et al. Reiki therapy for pain, anxiety and quality of life. *BMJ Support Palliat Care*. 2019;9(4):434–438.
37. Chirico A, Aiuto GD, Penon A, et al. Self-Efficacy for Coping with Cancer Enhances the Effect of Reiki Treatments During the Pre-Surgery Phase of Breast Cancer Patients. *Anticancer Res*. 2017;37(7):3657–3665.
38. Erdogan Z, Cinar S. The effect of Reiki on depression in elderly people living in nursing home. *Indian Journal of Traditional Knowledge*. 2016;15(1):35–40.
39. Beard C, Stason WB, Wang Q, et al. Effects of complementary therapies on clinical outcomes in patients being treated with radiation therapy for prostate cancer. *Cancer*. 2011;117(1):96–102.
40. Baglioni C, Svetoslava N, Wolfram R, et al. Sleep and mental disorders: a meta-analysis of polysomnographic research. *Psychol Bull*. 2016;142(9): 969–990.
41. Loh KP, Peggy B, Arti H, et al. How do I best manage insomnia and other sleep disorders in older adults with cancer? *J Geriatr Oncol*. 2016;7(6):413–421.