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Original Article

The effect of Reiki and guided imagery intervention on pain and fatigue in oncology patients: A non-randomized controlled study

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ABSTRACT

This study was conducted to investigate the effects of Reiki and guided imagery on pain and fatigue in oncology patients. This quasi-experimental study with a pretest and posttest design was conducted with 180 oncology patients at the oncology clinic of Dicle University Hospital in Turkey, between July 2017 and February 2018. The patients were divided into three groups: Reiki, guided imagery and control, with 60 patients in each group. The Reiki and guided imagery group patients underwent their respective interventions for three consecutive days separately (25–30 min; mean: 15.53 min). The interventions of Reiki and guided imagery reduced pain and fatigue in the oncology patients. It is recommended that oncology nurses use Reiki and guided imagery in patient care.

Introduction

Cancer is a social and economic burden for individuals, families and the society due to its significant mortality and morbidity rates.[1,2] Cancer is the second leading cause of death both in the world and in Turkey.[3,4] The prevalence of cancer in Turkey is 247.6/100,000 in males and 177.5/100,000 in females[4].

The onset of many symptoms during and after the cancer treatment process may adversely affect the course of the disease and its response to treatment. The easiest way to deal with symptoms in cancer patients is to prevent symptoms. Studies have focused on identifying and relieving common symptoms such as pain and fatigue in cancer patients. Various complementary and alternative treatment methods have been used to manage these symptoms including Reiki,[5,6] which means universal life energy in Japanese.[7] Reiki has been used as an alternative and complementary energy therapy to strengthen the body's self-healing capacity. Reiki is claimed to provide physical and spiritual improvement and relief, eliminates individual imbalance and promote normal levels of vital signs.[8–10] Reiki has been used for many symptoms such as acute/chronic pain and fatigue in cancer.[11,12] Studies have also shown that the use of Reiki in cancer patients may help reduce pain.[13–15]

Another complementary and alternative medicine practice is guided imagery. Guided imagery allows us to: 1) help relieve patients from daily life and stressful thoughts, 2) provide physical relaxation, and 3) reduce pain.[16] Guided imagery reduces the symptoms that are found in many diseases. It allows positive behaviors to occur in the patient.[16,17] Kwekkboom et al. reported that cancer patients were satisfied with imagery intervention and used it in their daily lives to achieve a positive effect on reducing pain and fatigue.[18] Reiki and guided imagery applied to oncology patients are thought to have positive physiological and psychological effects in adapting to the disease and treatment.

Aim

This study aimed to assess the effects of Reiki and guided imagery on pain and fatigue in oncology patients.

Hypotheses of the study

H_1: The interventions of Reiki and guided imagery reduce pain and fatigue in oncology patients.

Methods

Design and sample

This study used a quasi-experimental pretest and posttest design with two experiment groups (reiki and guided imagery) and a control group. The sample size estimation was made by conducting a prior power analysis (medium effect size = 0.6; significance level = 0.05; power = 80%) using the G*Power software in Mac OS.

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A total of 180 oncology patients were selected by purposive sampling. The participants were assigned into three groups as the Reiki group (n = 60), the guided imagery group (n = 60), and the control group (n = 60). The population of the study was adult patients with different cancer diagnoses from the oncology clinic of Dicle University Hospital in Turkey. Those who did not have any visual-auditory impairment, were able to read and write in Turkish, would stay for at least three days and expressed medium or severe pain [5 or above according to the Visual Analog Scale (VAS)] were included in the study. Patients who had previous Reiki or guided imagery experience and those with causes of pain other than cancer were excluded from the study.

Intervention

A unique treatment protocol was used for each patient receiving Reiki in the intervention group. The reason for the individualized treatment stemmed from the fact that the patients who participated in the study had different types of cancer and a pragmatic approach was required. The study was conducted with a single Reiki practitioner trained on Reiki's Usui line (Degree 2), Zeliha Buyukbayram, and a nurse with a master's degree in medical nursing. The administration of Reiki aims to maintain energy flow and heal by putting the hands of the practitioners on or holding them 2–3 cm above patients' troubled areas.[19,20] In this study, the researcher put her hands 2–3 cm above the body without touching the patient's body. The patients laid in a supine position in their beds, and Reiki was applied without touching the affected areas of illness for a period of five minutes. Reiki was also applied to other areas, including the head, eye, neck, chest, abdominal cavity, inguinal and legs areas that correspond to the chakra regions that are responsible for providing the body's energy flow for an average of three minutes. At between 7- and 9 pm in the evening (the time interval not covering visits, treatment and sleeping hours), the research nurses assisted the participants to lie down in the bed and turn over to a relaxing position on their back, a supine position. Reiki was performed by one of the researchers for three consecutive days once a day. During the rest, for all participants, the environment was enhanced to reduce stimuli and facilitate rest by closing the door and posting a sign to prevent being disturbed by visitors and healthcare personnel. However, no changes were made in the environmental light. Reiki was applied to each patient for about 25–30 min.

For guided imagery, nature pictures and sounds were selected by the researchers. Guided imagery selection was supported by an instructor at the faculty of fine arts. The guided imagery CD consisted of relaxing, soothing, soft and slow-paced instrumental music, with mixed nature sounds and photographs. The duration of the guided imagery CD implementation was 15.53 min. The patients laid in a supine position in their beds, with the bed head at 30–45°. The patients watched images and listened to sounds from the computer. The guided imagery intervention was carried out by the researchers once a day for three consecutive days.

Data collection tools

A patient identification form, the Visual Analog Scale and the Piper Fatigue Scale were used as the data collection tools.

Patient Identification Form: The form consisted of 7 questions on the characteristics of the patients.

Visual Analog Scale (VAS): VAS was used to record the pain levels of the patients before and after the Reiki and guided imagery interventions. VAS has predefined values. The scale is marked with numbers from 0 to 10. 10 points on the scale correspond to a pain never before experienced by the patient. The severity of pain is estimated by asking the patient at what point on the scale to place the suffering difficulty experienced at the moment.[19]

Piper Fatigue Scale: It was developed by Piper et al. in 1987.[20] The validity and reliability study of the scale was conducted by Can et al. in Turkey. The Cronbach's alpha reliability coefficient of the scale was found to be 0.87–0.91 in subgroups and 0.94 in the overall scale.[21] The scale consists of 27 items. It includes four subdomains as behavioral, affective, sensory and cognitive.[20] In addition to these, there are 5 items (1 and 24–27) which are important in evaluation of fatigue data but are not used in fatigue score calculation.[20] The subdomain scores are obtained by dividing the total score of all the items in that subdomain by the number of items. The answers for each item are evaluated between 0- and 10 points. The total fatigue score calculation is achieved by dividing the total scores of the 22 items by the number of items. A high score obtained indicates that the level of fatigue is high.[20,21] In this study, the Cronbach's alpha coefficient of the scale was 0.94–0.96 for subgroups and 0.93 for the overall scale.

Data collection

The Patient Identification Form prepared by the researchers, VAS for pain level assessment and PFS for fatigue level assessment were used to collect the data. The data were collected between July 2017 and February 2018. The implementation of the questionnaire forms and the scales lasted 20–25 min on average for each patient. The data were collected firstly from the control group, secondly from the Reiki group and finally from the guided imagery group.

The oncology clinic performed only medical treatment. Reiki, guided imagery in patients with cancer was not a routine care at the oncology clinic.

Pretest data collection

- Verbal and written consent of the patients in the Reiki, guided imagery and control groups was obtained after providing them with information about the interventions.
- Those with pain levels of 5 or above according to VAS were determined in the Reiki, guided imagery and control groups
- Patient identification forms and PFS were applied.

Posttest data collection

- The Reiki group patients underwent the Reiki intervention for three days, and then, VAS and PFS were applied.
- The guided imagery group patients watched a guided imagery CD for three days, and then, VAS and PFS were applied.
- The control group patients underwent VAS and PFS after three days without applying any intervention.

Variables

Independent Variables: Reiki and guided imagery interventions
Dependent Variables: Pain and fatigue levels
Control Variables: The identifying characteristics of the patients (age, sex, marital status, and education level) were the control variables of the study.

Data analysis

After the data were coded by the researcher, they were analyzed by the SPSS (Statistical Package for the Social Sciences; SPSS Inc., Chicago, IL, USA) 18.0 statistical package software. The data were analyzed using frequencies and percentages, arithmetic means and standard deviation and chi-squared values, and paired-samples t-test

Table 1
Baseline comparison of the characteristics among the Reiki, guided imagery and control groups.

Control variable		Reiki Group (n:60)		Guided Imagery Group (n:60)		Control Group (n:60)	
		S	%	S	%	S	%
Disease Diagnosis	Lung ca	18	30.0	18	30.0	20	33.3
	Breast ca	12	20.0	11	18.3	12	20.0
	Colon ca	14	23.3	13	21.7	13	21.7
	Stomach ca	9	15.0	10	16.7	8	13.3
	Others	7	11.7	8	13.3	7	11.7
Disease Stage	Metastatic	33	55.0	37	61.7	38	63.3
	Non-metastatic	27	45.0	23	38.3	22	36.7
Sex	Female	27	45.0	27	45.0	24	40.0
	Male	33	55.0	33	55.0	36	60.0
Marital Status	Married	55	91.7	56	93.3	54	90.0
	Single	5	8.3	4	6.7	6	10.0
Education Level	Illiterate	22	36.7	20	33.3	28	46.7
	Literate	14	23.3	16	26.7	10	16.7
	Primary education	21	35.0	14	23.3	14	23.3
	High school and higher	3	5.0	10	16.7	8	13.3
Disease Duration	0–1year	33	55.0	26	43.3	30	50.0
	2–5 years	19	31.7	30	50.0	20	33.3
	6 years and above	8	13.3	4	6.7	10	16.7
Chronic Pain	Present	47	78.3	47	78.3	48	80
	Absent	13	21.7	13	21.7	12	20
Pain Relief Methods	Massage on painful region	3	5.0	6	10.0	4	6.7
	Exercise	1	1.7	–	–	–	–
	Analgesic	56	93.3	54	90.0	56	93.3
Age		$\bar{x} \pm ss$ 51.75±13.77		$\bar{x} \pm ss$ 47.86±14.00		$\bar{x} \pm ss$ 50.93±13.99	

analysis of variance (ANOVA) and Mann-Whitney U test were used to test the changes in the measured values. The level of significance was taken as 0.05.

Ethical considerations

The researcher was certified to perform Reiki before conducting the study. Ethical approval was obtained from the Diyarbakir Gazi Yasargil Training and Research Hospital Ethical Committee for Clinical Research (Decision no: 52). Additionally, the patients were informed about the study, and they were told that they could leave the study whenever they wanted. Those who volunteered to participate were included in the study.

Results

The comparison of the control variables of the experiment and control groups is given in Table 1. In terms of the control variables, the difference between the experiment groups and the control group was statistically insignificant ($p>0.05$) (Table 1).

Table 1. Baseline comparison of the characteristics among the Reiki, guided imagery and control groups

After the Reiki and guided imagery interventions, the mean pain scores of the patients decreased, and the difference was statistically significant ($p<0.05$) (Table 2).

Table 2. Comparison of the Pretest-Posttest Mean Pain of Patients in the Reiki, Guided Imagery and Control Groups

Table 2
Comparison of the pretest posttest mean pain of patients in the Reiki, guided ımagery and control groups.

Groups	VAS (mean±SD) Pretest	Posttest	Test and Significance
Reiki	7.20±1.11	6.26±1.21	$t = 10.18$ $p<0.01$
Guided Imagery	7.16±1.02	6.68±0.96	$t = 6.60$ $p<0.01$
Control Group	6.96±1.10	6.95±1.14	$t = 0.37$ $p>0.05$
Test and Significance	$F = 0.81$ $p>0.05$	$F = 5.73$ $p<0.01$	

t: paired-samples *t*-test F:One way Anova test.

After the Reiki, and guided imagery interventions, the mean total fatigue scores of the patients decreased, and the difference was statistically significant ($p<0.05$) (Table 3).

Table 3. Comparison of the Posttest Mean Piper Fatigue Scale of Patients in the Reiki, Guided Imagery and Control Groups

Discussion

Cancer patients experience many symptoms related to their disease. Various alternative treatment methods have been used to control or prevent these symptoms. Two of these methods, Reiki and guided imagery, have been recommended because of their reliability and lack of side effects.[13,14,18]

The pain levels of the patients were found to decrease following the Reiki and guided imagery interventions (Table 2). Vitale et al. reported that Reiki therapy, which may increase relaxation, had a positive effect on pain relief[12], and a similar finding was obtained in a report by Tsang et al.[13] Reiki has also been demonstrated to reduce pain in other studies.[14,15,22–24] Guided imagery intervention has also been indicated to reduce pain in other studies.[18,25,26–28] The results of our study were consistent with the results of previous studies. In the light of these evaluations, Reiki and guided imagery independent of nursing initiatives may have a positive effect on pain reduction.

The mean fatigue scores of the patients decreased following the Reiki and guided imagery interventions, and the difference was statistically significant (Table 3). Tsang et al., Aghabati et al. and Demir et al. reported that Reiki intervention in cancer patients was effective in reducing fatigue.[13,22,23] Kwekkboom et al. remarked that patients applied guided imagery in their daily lives, and it was effective in reducing fatigue[18], whereas Charalambous et al. showed similar findings.[25] These results were also found in other studies.[29–31] The results of our study were consistent with the results of the others mentioned here. When the results of all these studies are evaluated together Reiki and guided imagery, independent of nursing initiatives, may have a positive effect in fatigue reduction.

These results supported the hypothesis **"the interventions of Reiki and guided imagery reduce pain and fatigue in oncology patients"**.

Table 3
Comparison of the posttest mean piper fatigue scale of patients in the Reiki, guided imagery and control groups.

Groups	PFS (mean±SD) Behavioral Pretest	Posttest	Test and p	Affective Pretest	Posttest	Test and p	Sensory Pretest	Posttest	Test and p	Cognitive Pretest	Posttest	Test and p	Total Pretest	Posttest	Test and p
Reiki	7.64±0.95	6.70±0.82	$t = 19.03$ $p<0.01$	7.68±0.93	7.68±0.93	$t = 0.00$ $p>0.05$	6.97±0.70	6.12±0.60	$t = 15.40$ $p<0.01$	7.09±1.24	6.43±1.09	$t = 11.15$ $p<0.01$	7.35±0.86	5.48±0.55	$t = 20.75$ $p<0.01$
Guided Imagery	7.42±1.01	6.87±0.89	$t = 9.69$ $p<0.01$	7.44±0.94	6.69±0.88	$t = 9.57$ $p<0.01$	6.94±0.84	6.36±0.76	$t = 9.23$ $p<0.01$	6.86±1.28	6.26±1.14	$t = 9.93$ $p<0.01$	6.94±0.96	6.55±0.87	$t = 7.56$ $p<0.01$
Control Group	6.00±0.87	6.82±0.74	$t=-11.97$ $p<0.01$	7.29±0.89	7.29±0.89	$t = 0.00$ $p>0.05$	5.37±0.58	6.55±1.17	$t=-9.41$ $p<0.01$	6.58±1.16	7.22±1.00	$t=-5.78$ $p<0.01$	6.64±0.83	6.63±0.83	$t = 0.47$ $p>0.05$
Test and Significance	$F = 52.83$	$F = 0.67$		$F = 2.721$	$F = 18.34$		$F = 97.35$	$F = 3.67$		$F = 2.55$	$F = 13.60$		$F = 9.47$	$F = 0.47$	
	$p<0.01$	$p>0.05$		$p>0.05$	$p<0.01$		$p<0.01$	$p>0.05$		$p>0.05$	$p<0.01$		$p<0.01$	$p<0.05$	

t: paired-samples *t*-test F:One way Anova test.

Limitations

A limitation of this study was the failure to ensure randomization. Another limitation was that the patients in the experiment groups did not self-select their intervention group. Emotional status may affect pain and fatigue. Another limitation was no assessment of the emotional statuses of the patients. The Reiki practitioner was also an author, which was a limitation.

Conclusions and implications for nursing

The pain and fatigue levels decreased after the Reiki and guided imagery interventions. The Reiki intervention was found to be more effective in reducing pain and fatigue in comparison to the guided imagery intervention.

It is recommended that in-service training for nurses about Reiki and guided imagery intervention as independent nursing initiatives should be carried out and maintained. Furthermore, these should be included in the nursing education curriculum, and extensive studies with various patient groups should be conducted to investigate the effectiveness of Reiki and guided imagery interventions.

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