

The Effects of Yoga, Massage, and Reiki on Patient Well-Being at a Cancer Resource Center

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Background: Cancer resource centers offer patients a variety of therapeutic services. However, patients with cancer and cancer healthcare practitioners may not fully understand the specific objectives and benefits of each service. This research offers guidance to cancer healthcare practitioners on how they can best direct patients to partake in specific integrative therapies, depending on their expressed needs.

Objectives: This article investigates the effects of yoga, massage, and Reiki services administered in a cancer resource center on patients' sense of personal well-being. The results show how program directors at a cancer resource center can customize therapies to meet the needs of patients' well-being.

Methods: The experimental design measured whether engaging in yoga, massage, or Reiki services affects the self-perceived well-being of 150 patients at a cancer resource center at two times: before and after each service. Data were analyzed for each well-being outcome using mixed-model analysis of variance.

Findings: All three services helped decrease stress and anxiety, improve mood, and enhance cancer center patrons' perceived overall health and quality of life in a similar manner. Reiki reduced the pain of patients with cancer to a greater extent than either massage or yoga.

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Social scientists from an array of disciplines, including oncology, health, and service research, have begun investigating the therapeutic role of services offered at cancer resource centers on the psychosocial well-being of patients with cancer. The suggestion has been made that cancer resource centers represent “healing landscapes” that serve the emotional, social, and informational needs of people living with cancer and those who care for them (English, Wilson, & Keller-Olaman, 2008, p. 74). Other researchers have reported that cancer resource centers often become a home away from home, or a “third place,” for patients with cancer because such environments help them to alleviate the feelings of social isolation and stigma that often accompany medical treatments and a cancer diagnosis (Glover & Parry, 2009, p. 97). Researchers have also discovered that, by participating in cancer resource center activities, patients with cancer can often temporarily relieve various side effects, such as cancer-related fatigue, and receive life-enhancing

social supportive services (Rosenbaum & Smallwood, 2011, 2013).

Oncologists, nurses, social workers, and other health-related employees have endorsed integrative therapy services at cancer resource centers (DiGianni, Garber, & Winer, 2002; Fowler & Newton, 2006). These services, including individual and group support programs, are typically delivered free of charge to patients at cancer resource centers. Services include educational, nutritional, and wellness programs, as well as integrative therapies, such as aromatherapy and essential oils, yoga, massage, and Reiki (Anderson & Taylor, 2012; Long, Huntley, & Ernst, 2001; Ness, 2013). In the context of this article, integrative therapies refer to those that are administered together with conventional medicine, whereas alternative medicine or therapies are used in place of conventional medicine. This article's focus is on integrative therapies offered to patients with cancer in conjunction with conventional medicine and with a physician's approval.

The extent to which patients with cancer engage in integrative therapies during cancer treatment is profound. Examining studies from 18 countries, Horneber et al. (2012) found that about 40% of patients across all studies noted use of integrative therapies, as well as alternative medicines, at some point during their treatment; the United States had the highest percentage (50%) of use. Given that half of all patients with cancer in the United States will engage in integrative therapy or alternative medicine (Chong, 2006), often at outpatient cancer resource centers, understanding the role of these centers on patients' body, mind, and spirit is critical for cancer healthcare practitioners.

In terms of common services provided by cancer resource centers, the literature highlights the benefits to the well-being of patients with cancer who engage in yoga (Culos-Reed, Carlson, Daroux, & Hatley-Aldous, 2006; Smith & Pukall, 2009), massage therapy (Listing et al., 2009; Sturgeon, Wetta-Hall, Hart, Good, & Dakhil, 2009), and Reiki (Marcus, Blazek-O'Neill, & Kopar, 2013; Olson & Hanson, 1997). As a result, cancer resource centers are fulfilling the needs of patients with cancer for integrative cancer therapies that accompany traditional medical treatments. However, they tend to be doing so in a haphazard manner, often encouraging patients with cancer to self-select cancer therapies according to their schedules, personal interests, and financial conditions, when applicable.

Although psychosocial research concludes that the majority of patients with cancer using integrative therapies for treating cancer report at least some benefits from the treatment (Goldstein, Lee, Ballard-Barbash, & Brown, 2008), scant research discusses how cancer resource centers can offer integrative therapies in a way that maximizes the well-being of patients. The current authors question whether the à la carte method of integrative cancer therapy selection, which prevails at cancer resource centers, can meet the needs for patient well-being and concerns. This study addresses this chasm in the oncology domain by (a) exploring simultaneously the effects of yoga, massage, and Reiki therapies on the well-being of cancer resource center patrons; (b) evaluating the benefits of yoga, massage, and Reiki therapies on six well-being outcomes—stress, pain, anxiety, mood, overall health, and quality of life—at two periods (before and after each class or session); and (c) providing guidance on how to customize integrative cancer therapies according to the specific needs, well-being concerns, and capabilities of patients with cancer.

Methods

Sample and Procedures

The institutional review board at Cadence Health Care System in Geneva, Illinois, approved this study. Neither the investigators nor the research staff had conflicts of interest. Informed consent was obtained before participants engaged in the integrative service. Data were collected from a convenience sample of patients with cancer who self-enrolled in yoga, massage, and Reiki services during a six-month period at LivingWell Cancer Resource Center in Geneva, Illinois. LivingWell's program director asked 150 patrons who participated in yoga, massage, or Reiki services (50 participants of each) to voluntarily participate in the study. On agreeing to participate, the study

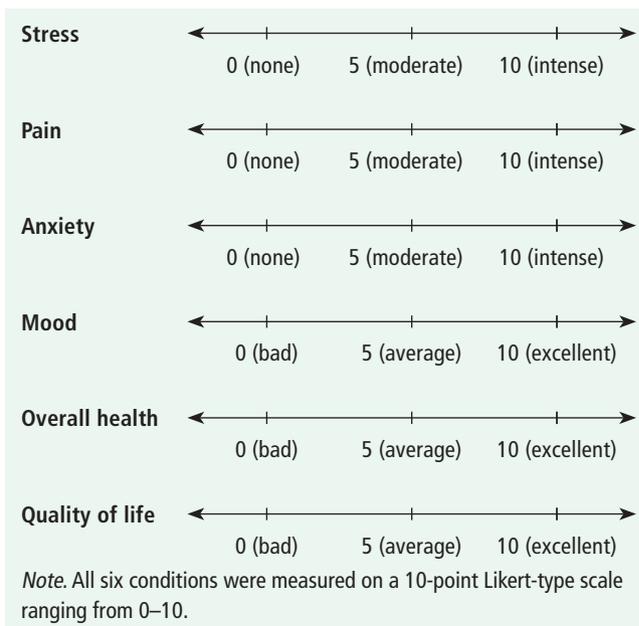


FIGURE 1. Conditions of Well-Being and Their Likert-Type Scale Measurements

protocol involved each participant being given a questionnaire, a blank envelope, and verbal and written instructions to complete the questionnaire before and after participating in one of the three services. The participants completed the survey in isolation from the service provider. The questionnaires were anonymous, and participants were assured by the service provider that the study was to enhance resource center services.

Of the 150 study participants, all of whom were diagnosed with cancer, 137 (91%) were women, and 13 (9%) were men. The length of time participants spent taking a yoga, massage, or Reiki class or session were 1–3 months (22%, n = 33), 4–6 months (15%, n = 23), 7–12 months (5%, n = 8), 1–3 years (15%, n = 23), and more than 3 years (9%, n = 13); in addition, 33% (n = 50) of the participants were taking their first class or session at the time of questionnaire completion. At the time of data collection, 75% (n = 112) of the participants were either newly diagnosed with cancer or had completed their prescribed medical treatment, 21% (n = 32) were undergoing chemotherapy, and 4% (n = 6) were undergoing radiation treatment.

Instrument

The study employed a six-item pre- and post-treatment survey adapted from a measure used in a study exploring the effects of Reiki by Moore (n.d.), as well as from conversations with the LivingWell program director, the LivingWell wellness director, and a Reiki instructor. One item pertained to each of the six conditions of participants' well-being at "this moment." These conditions were (a) stress, (b) pain, (c) anxiety (e.g., nervousness, sense of panic, tenseness), (d) mood, (e) overall health, and (f) quality of life. Each of the six items were measured on a 10-point Likert-type scale ranging from 0–10 (see Figure 1). Other questions on the survey included class or session type (i.e., yoga, massage, or Reiki), gender, cancer diagnosis status, chemotherapy status, radiation status, and length of time participating in the particular class or session.

Statistical Analyses

This was a repeated measures analysis of variance (ANOVA) study in which participants reported on self-perceived, subjective well-being measures before and after (within one to three minutes prior and following the service) receiving an integrative service at LivingWell. The data were analyzed using six within- and between-subjects mixed-model ANOVAs, using SPSS®, version 20.0. In the analyses, the within-subjects factor was time, and the between-subjects factor was the integrative therapy (yoga, massage, Reiki). A *p* value of less than 0.05 was deemed statistically significant. Table 1 illustrates the means and standard deviations related to patient well-being before and after integrative therapies.

Stress: In terms of stress, Wilks's λ was significant ($F[1, 147] = 373.34, p < 0.001$), indicating that participants' feelings of stress differed between the pre- and postevaluations. The interaction between time and class type was not significant ($F[2, 147] = 1.64$); the change in means was consistent among all three types of integrative services. All patients with cancer entered a yoga class, massage session, or Reiki session with average stress levels ($\bar{X} = 4.7$ -5.6). By the end of the class or session, their perceived stress levels decreased ($\bar{X} = 1.54$ -1.82). All three integrative methods can successfully remedy the stress levels of patients with cancer.

Pain: In terms of changes in the mean pain levels between the two time points, both Wilks's λ ($F[1, 147] = 144.61, p < 0.001$) and the interaction effect ($F[2, 147] = 9.1, p < 0.001$) were significant. The change in the means regarding feelings of pain experienced by patients with cancer pre- and postintegrative therapy differed across the three types of therapy. One-way ANOVAs were used to explore this interaction. Significant differences in changes in pain scores by type of therapy ($F[2, 147] = 7.14, p < 0.001$) were noted. A follow-up test, using the Tukey HSD (honest significant difference) test, evaluated pairwise differences among the means. The results revealed that patients with cancer enrolling in a yoga class ($\bar{X} = 2.48$) and massage session ($\bar{X} = 3.12$) reported the same level of pain before the class or session. However, before receiving Reiki, patients with

cancer reported a significantly higher pain level than patients who enrolled in either yoga or massage ($\bar{X} = 4.24$). A fact worth noting is that, although cancer center patrons are able to enroll in any service, when patrons expressed pain concerns to a center staff member, they were encouraged to enroll in Reiki and to refrain from yoga and massage, which instead are prime integrative therapies for alleviating stress and anxiety.

A second one-way ANOVA was run to evaluate feelings of pain experienced by patients with cancer after participating in a yoga class, massage session, or Reiki session. The results revealed that the mean pain scores did not significantly differ among the three services. After partaking in yoga ($\bar{X} = 1.74$), massage ($\bar{X} = 1.25$), or Reiki ($\bar{X} = 1.85$), the participating patients with cancer reported the same level of pain. Again, patients with cancer enrolled in a Reiki session began the session with a significantly higher pain level than patients participating in either yoga or massage.

Anxiety: In terms of mean differences regarding anxiety, the Wilks's λ was significant ($F[1, 147] = 148.41, p < 0.001$), but the interaction effect was not significant ($F[2, 147] = 1.85$). All three integrative methods are equally effective in helping patients with cancer alleviate anxiety. Patients with cancer reported relatively average to high anxiety levels before partaking in yoga ($\bar{X} = 3.08$), massage ($\bar{X} = 3.36$), or Reiki ($\bar{X} = 4.32$). In addition, patients reported extremely low anxiety levels after receiving an integrative therapy, with means ranging from 1 for massage, to 1.26 for yoga, to 1.62 for Reiki. All three methods are equally effective in helping patients with cancer to decrease their anxiety.

Mood: The mean differences regarding the self-reported mood of patients with cancer pre- and postintegrative therapy were significant (Wilks's $\lambda = 0.47, F[1, 147] = 148.41, p < 0.001$), but the interaction effect was not significant ($F[2, 147] = 0.58$). Participating patients with cancer entered an integrative therapy with a mean mood that ranged from a low of 5.74 for Reiki to a higher score of 6.58 for massage. These average scores significantly increased after patients completed a Reiki session ($\bar{X} = 8.3$), massage session ($\bar{X} = 8.7$), or yoga class ($\bar{X} = 8.74$).

TABLE 1. Patient Well-Being Before and After Integrative Therapies

Conditions of Well-Being	Reiki (N = 50)				Massage (N = 50)				Yoga (N = 50)			
	Before		After		Before		After		Before		After	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Stress ^a	5.6	2.01	1.82	1.64	4.96	2.4	1.54	1.89	4.7	1.91	1.7	1.95
Pain ^a	4.24	2.71	1.62	1.85	3.12	2.27	1.06	1.25	2.48	2.04	1.48	1.74
Anxiety ^a	4.32	2.65	1.62	1.77	3.36	2.75	1	1.41	3.08	2.34	1.26	2.03
Mood ^b	5.74	1.98	8.3	2.01	6.58	2.18	8.7	1.53	6.2	2.37	8.74	1.44
Overall health ^b	5.44	2.2	6.94	2.14	6.36	2.02	7.56	2.08	6.62	2.23	7.38	2.37
Quality of life ^b	5.58	2.05	7.3	2.32	6.42	2.33	7.92	2.06	6.62	2.26	7.94	2.06

^a Conditions were measured on a 10-point Likert-type scale ranging from 0 (none) to 10 (intense).

^b Conditions were measured on a 10-point Likert-type scale ranging from 0 (bad) to 10 (excellent).

Note. All before and after within group mean differences were significant ($p < 0.001$).

Implications for Practice

- ▶ Encourage patients with cancer to patronize cancer resource centers to partake in integrative therapies.
- ▶ Recommend Reiki to patients with cancer who are experiencing pain.
- ▶ Suggest integrative therapies to patients with cancer who are concerned about their moods, including bouts of depression.

Overall health: Mean scores on perceived health before and after receiving an integrative therapy significantly differed ($F[1, 147] = 63.54, p < 0.001$), but the interaction was not significant ($F[2, 147] = 2.21$). Patients with cancer participating in a Reiki session reported the lowest overall health ($\bar{X} = 5.44$), although this mean did not significantly differ from the mean of patients partaking in either massage ($\bar{X} = 6.36$) or yoga ($\bar{X} = 6.62$). All participating patients with cancer reported significant improvements in perceived overall health after receiving an integrative therapy, with reported averages ranging from 6.94 for patients receiving Reiki, to 7.38 for yoga, to 7.56 for patients receiving a massage.

Quality of life: The means for perceived quality of life differed between the two time points ($F[1, 147] = 109.43, p < 0.001$). Given that the interaction was not significant ($F[2, 147] = 0.64$), the mean differences in perceived quality of life were consistently the same among all three pre- and postintegrative therapies. Patients who participated in all three therapies reported significant increases in their perceived quality of life, with mean scores ranging from a low of 7.3 for patients receiving Reiki, to 7.92 for patients who received a massage, to a high of 7.94 for patients who participated in a yoga class.

Discussion

This study found that patients with cancer who participated in the integrative therapies of yoga, massage, and Reiki, administered at a cancer resource center, experienced improved quality of life. Evidence from other studies shows that patients with cancer reported immediate decreases in perceived fatigue, pain, and anxiety after receiving Reiki (Olson, Hanson, & Michaud, 2003; Tsang, Carlson, & Olson, 2007), decreases in depression after receiving massage therapy (Falkensteiner, Mantovan, Muller, & Them, 2011), and decreases in anxiety and stress with improvements in mood after participating in yoga (Smith & Pukall, 2009).

The findings from this study address a void in the literature on how cancer resource centers should best administer integrative cancer therapies—including yoga, massage, and Reiki—in accordance with the needs of patients with cancer. The results may inform program directors to counsel patients with cancer to participate in these integrative therapies, based on deficits in their quality of life. In this study, participation in integrative therapies reduced patients' stress and anxiety and improved their mood, overall health, and quality of life. In particular, participation in a Reiki session helped patients with cancer with pain. This finding regarding the empirical evidence of pain relief after a Reiki session contributes to the literature on the positive effects of biofield therapies, which refers to a group of therapies that effect change in energy fields that purportedly surround and penetrate the human body (Hart, Freel, Haylock, & Lutgendorf, 2011; Jain & Mills, 2010). Although biofield therapies are used in many cultures to facilitate natural healing, cancer researchers have only begun to empirically explore the therapeutic impact of these therapies on negative side effects from cancer and overall health of patients with cancer.

Limitations

Several limitations of this study may direct future investigation. This study lacked an active control group that did not

partake in any of the three integrative therapies. Patients with cancer typically patronize cancer resource centers to engage in integrative therapies. As such, an active control group, formed from cancer resource center patrons, would have been impossible to gather at the sample location.

The current authors also did not engage in a longitudinal study regarding the long-term effects of yoga, massage, and Reiki on cancer resource center patrons' perceived quality of life. The goal of this study was to understand the effects of three integrative therapies on six well-being outcomes of patients with cancer. Given that the questionnaire used single items to provide an indication of perceived changes in health, the questionnaire is not evaluating the full complexity of each well-being outcome. Consequently, the results should be viewed as a more general perspective of each of the six well-being outcomes.

In addition, uncontrollable variables could have potentially affected or changed the outcomes of participant scores on the questionnaires. For example, social support, which is often provided by Reiki providers and massage therapists, as well as by fellow patients with cancer and other employees, tends to be integral to the healing process of patients with cancer. In addition, cancer resource center staff would verbally encourage patients with cancer to enroll in Reiki therapies rather than participating in yoga classes or massage sessions. The perceived efficacy of any integrative therapy is likely enhanced through the social support often received at cancer resource centers (White, 2002).

Implications for Nursing

Nurses should be aware of the beneficial role of integrative therapies that are offered at cancer resource centers for people living with cancer. Too often, patients with cancer are unaware of cancer resource centers and integrative services. As such, oncology nurses are encouraged to discuss with patients how services such as yoga, massage, and Reiki can improve their quality of life by potentially helping to reduce stress, depression, and pain. Most notably, patients with cancer who experience pain should be encouraged to partake in Reiki, as well as in other palliative care techniques, such as acupuncture.

Some patients with cancer may perceive Reiki and yoga as having a religious undertone or a New Age origin and, consequently, may shy away from these services. Oncology nurses can play a role in educating patients with cancer about integrative services in verbal discussions and with printed materials about Reiki and yoga that emphasize that these services follow nonreligious practices. In addition, although not the focus of this study, oncology nurses may encourage patients' family members or caregivers

to participate in cancer resource services to help decrease side effects associated with cancer care, such as fatigue and stress.

In terms of patient education, the American Cancer Society's website contains information supporting integrative therapies (<http://bit.ly/IT3kSiS>). Although this information guides patients with cancer, it fails to connect patients with cancer resource centers that are geographically close. Patients may be unaware of nearby cancer centers or that many centers offer complementary services. Oncology nurses are encouraged to act as conduits to connect cancer resource centers and their patients; using a website such as www.nursenavigator.com is one way of doing so.

Conclusion

Despite its limitations, this study helps cancer resource center program directors, oncologists, and nurses to understand how programs at these centers can be customized to meet the specific needs of each patient with cancer. Patients who patronize cancer resource centers to enhance their quality of life, specifically in terms of alleviating stress and anxiety and improving mood, should be encouraged to participate in yoga, massage, or Reiki, whereas patients who desire to reduce pain should be encouraged to participate in Reiki. Indeed, these three integrative therapies represent noninvasive, nonmedical, and cost-efficient methods that positively influence and contribute to the perceived quality of life of patients with cancer.

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