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Endoscopic Procedure With a Modified Reiki Intervention

A Pilot Study

ABSTRACT

This pilot study examined the use of Reiki prior to colonoscopy to reduce anxiety and minimize intraprocedure medications compared with usual care. A prospective, nonblinded, partially randomized patient preference design was employed using 21 subjects undergoing colonoscopy for the first time. Symptoms of anxiety and pain were assessed using a Likert-type scale. Between-group differences were assessed using chi-square analyses and analysis of variance. There were no differences between the control (n = 10) and experimental (n = 11) groups on age (mean = 58 years, SD = 8.5) and gender (53% women). The experimental group had higher anxiety (4.5 vs. 2.6, p = .03) and pain (0.8 vs. 0.2, p = .42) scores prior to colonoscopy. The Reiki intervention reduced mean heart rate (−9 beats/minute), systolic blood pressure (−10 mmHg), diastolic blood pressure (−4 mmHg), and respirations (−3 breaths/minute). There were no between-group differences on intraprocedure medication use or postprocedure physiologic measures. Although the experimental group patients had more symptoms, they did not require additional pain medication during the procedure, suggesting that (1) anxious people may benefit from an adjunctive therapy; (2) anxiety and pain are decreased by Reiki therapy for patients undergoing colonoscopy, and (3) additional intraprocedure pain medication may not be needed for colonoscopy patients receiving Reiki therapy. This pilot study provided important insights in preparation for a rigorous, randomized, controlled clinical trial.

Colorectal cancer, a cancer of the colon and the rectum, kills more than 55,000 Americans each year affecting both men and women equally (especially those older than 50 years), as well as younger individuals who may have a family history of colorectal cancer or other digestive diseases. It is the third leading cause of cancer-related mortality in the United States and the fourth most common cancer in men and women (American Cancer Society [ACS], n.d., 2005). Fortunately, with early screening and detection, colorectal cancer is one of the most preventable cancers. According to the National Cancer Institute (2008), an estimated 112,340 individuals will be diagnosed with colon cancer this year and 41,420 will be diagnosed with rectal cancer. An estimated 52,180 will die from colorectal cancer.

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Background

Routine use of screening tests, such as colonoscopy, is the best way to detect and prevent colorectal cancer. Noncancerous or precancerous tumors or polyps can be found and removed, preventing the initiation of carcinogenic processes and subsequent metastasis and thereby allowing patients to obtain a more effective treatment(s) with fewer adverse effects. Patients whose cancers are found early and treated in a timely manner are more likely to survive than those whose cancers are not found until symptoms appear (ACS, n.d.).

Despite the advertisements and campaigns (e.g., Katie Couric's televised colonoscopy), many individuals still hesitate to undergo colonoscopy. This procedure

can be frightening, embarrassing, and anxiety producing, especially for people undergoing it for the first time. This anticipatory anxiety can lead to delays in screening, the need for additional sedating medications, and prolonged recovery time (Osborn & Sandler, 2004). Many could also be fearful of the negative results of the test. Studies have shown that a high baseline anxiety level can be a predictor for the increased need for intraoperative or intraprocedural sedatives or anesthetics to maintain the desired hypnotic effect (Norred, 2000; Osborn & Sandler, 2004; Petry, 2000). Some researchers have suggested that complementary therapies, such as Reiki, could be used to decrease preprocedural anxiety and pain (Augustin & Hains, 1996; Hayes, Buffum, Lanier, Rodahl, & Sasso, 2003; Norred, 2000; Osborn & Sandler, 2004; Petry, 2000; Salmore & Nelson, 2000).

Reiki

Reiki (*ray-kēē*), an ancient healing practice and a form of touch therapy, has its roots in Tibet thousands of years ago. Modern Reiki was rediscovered and introduced in Japan in the late 19th century by the Japanese Monk Dr. Mikao Usui and later introduced in the United States during World War II (Vitale, 2007; Wardell & Engebretson, 2001; Witte & Dundes, 2001). Today, there are at least seven major national and internationally recognized Reiki organizations, as well as numerous variations of the "traditional" Usui Reiki (Neild-Anderson & Ameling, 2000; Wetzel, 1989; Whelan & Wishnia, 2003).

Reiki is a Japanese word that describes a system of healing. *Rei* means "spirit or spiritual" and *ki* is "the universal life energy force." Through the gentle laying of the practitioner's hands on or above strategic areas on the recipient's body, an individual is reconnected to the "universal energy or life force," which, in turn, connects to the body's innate power of healing to promote self-healing and maintain health (Miles & True, 2003; Neild-Anderson & Ameling, 2000; Vitale, 2007; Wardell & Engebretson, 2001). Reiki is then defined as spiritually guided life energy force. It is simple and noninvasive and provides the benefits of meditation and relaxation, reducing stress and "awakening the body's inner healing powers through intuitive bodywork." By stimulating this innate healing, the Reiki therapy gives the recipient a sense of control without fear of adverse side effects (Witte & Dundes, 2001).

In Reiki, no attempt is made by the practitioner to evaluate the recipient's energy field or condition, nor does he or she manipulate it. Self-healing and comfort are accomplished through touch as the practitioner simply places his or her hands in a series of positions on 12 strategic areas on or above the recipient's body for about 5 minutes per position (Neild-Anderson & Ameling, 2000; Witte & Dundes, 2001).

Literature Review

The current high and escalating costs of healthcare prompted hospitals across the nation to implement significant system changes designed to reduce costs while maintaining optimum patient care. Concomitantly, increasing numbers of Americans have become painfully aware of the limitations and adverse effects of modern medicine. In a quest to find therapies that are helpful, less toxic, and cost-effective, many have tried at least one complementary therapy (Barnes, Powell-Griner, McFann, & Nahin, 2004; Gordon, 2004; Petry, 2000).

Preliminary studies have investigated the effectiveness of some complementary therapies in reducing pain and anxiety in certain surgical and endoscopic procedures (Muzzarelli, Force, & Sebold, 2006). Music therapy, for example, when used pre- and postoperatively in some surgical procedures, such as abdominal surgery, has demonstrated a reduction in anxiety, blood pressure, heart rate, and pain (Augustin & Hains, 1996; Evans, 2002; Koch, Kain, Ayoub, & Rosenbaum, 1998). Music therapy has also been used in bronchoscopies and was found to reduce anxiety, enabling the patient to tolerate the procedure better and minimizing the need for additional medication (Colt, Powers, & Shanks, 1999). In a prospective, randomized, controlled trial, music was observed to decrease the dose of the sedative medication required for colonoscopy and the combination of music and patient-controlled sedation improved patient acceptance of colonoscopy (Lee et al., 2002). The use of hypnosis facilitated recovery of some surgical patients, shortening their lengths of hospital stays and incurring fewer postoperative complications (Petry, 2000).

Other complementary healthcare modalities such as the use of herbs, aromatherapy, acupuncture, hypnosis, massage, and Reiki have also been studied and used as adjunct in noninvasive and invasive procedures to reduce anxiety, blood pressure, heart rate, and pain (Barnett, & Chambers, 1996; International Center for Reiki Training, n.d.; Muzzarelli et al., 2006; Norred, 2000; Petry, 2000; Smeltzer & Bare, 2004; Vanderbilt, 2003; Wang, Caldwell-Andrews, & Kain, 2003; Wardell & Engebretson, 2001).

Bucholtz (1996) conducted a randomized, single-blind, crossover study using Reiki treatments with six patients experiencing pain from rheumatoid arthritis and compared the results when casual touch treatments were also applied to the same patients. Although the results did not reach mathematical significance, patients who received Reiki showed consistent decreases in pain as compared with when they received casual touch treatments.

In other studies, researchers investigated whether Reiki treatments reduced pain in general and in cancer patients. The results showed that 85% of the patients had a reduction of their pain following Reiki treatments (Olson & Hanson, 1997; Olson, Hanson, & Michaud, 2003; Whelan & Wishnia, 2003). Presently, there has been little research published on the use of Reiki as a nursing intervention, a self-care practice, or an adjunct to medical or surgical treatments (Vitale, 2007).

Purpose

To date, there are no published studies that have examined the use of Reiki prior to colonoscopy. The purpose of this pilot study was to investigate the feasibility of using a modified Reiki intervention prior to colonoscopy to reduce anxiety and improve the experience of patients undergoing this procedure. We hypothesized that with reduced anxiety symptoms, patients would be better able to tolerate colonoscopy, have fewer or no unpleasant emotional symptoms, and have a reduced need for additional sedating medications during the procedure that can delay recovery. The long-term goal is to reduce the anxiety associated with anticipation of colonoscopy and improve utilization of this life-saving procedure.

Methods

Design and Sample

A prospective, convenience, nonblinded, partially randomized patient preference design was used. The study was carried out in one gastroenterology physician practice in a 156-bed community hospital in southeastern Massachusetts. Subjects were eligible to participate if this was their first colonoscopy, they were 30 years and older, and spoke English. Patients who were prisoners, pregnant, confused, or taking anxiolytic medications were excluded. As part of the usual preprocedure screening visit by the gastroenterologist, individuals were informed about the study and invited to participate. If interested, they were given written information about the Reiki intervention to take home and read. On the day of the procedure, the principal investigator (PI) spoke with each potential subject, explained the study in detail, and ascertained interest in participating. If potential subjects indicated continued willingness to participate, the PI obtained written informed consent. After written consent was obtained, patients were randomized to the experimental (preprocedure Reiki intervention) or control (usual colonoscopy care) group. Some patients randomized to the control group requested to be in the Reiki group, necessitating a modification of the design to a partially randomized patient preference design. The study was reviewed and approved by the institutional review board of the Jordan Hospital, charged with the protection of human subjects.

Protocol

Once a thorough explanation of the study was completed, the informed consent was obtained, and the treatment group was assigned, the nurse PI provided individuals in both groups with the standard education about what to expect during the endoscopic procedure and started an intravenous catheter. Baseline data (preprocedure, pre-Reiki) were collected and included the following: the subject's medical and surgical history, allergies, daily medications, reason for colonoscopy, blood pressure, heart rate, and respiratory rate. A self-report instrument developed by the nurse PI was used to measure baseline pain (0 = no pain, 10 = extreme pain) and anxiety (0 = no anxiety, 10 = extreme anxiety).

Shortly after the baseline measures were obtained, the Reiki group received a 15-minute modified Reiki intervention by a Reiki-trained nurse. She talked to the subject in a soft, soothing voice, placing her hands in a series of positions on or above strategic areas of the subject's body. The strategic areas were chosen on the basis of the patient's area of discomfort. For example, if the patient was experiencing abdominal cramps, the Reiki nurse concentrated on the torso; similarly, if the patient had a headache, she concentrated on the head, and so forth, depending on the subject's symptoms. The decision about whether to place her hands on or above the patient's body was based on whether the subject wished to be touched or not. If the subject did not wish to be touched, the Reiki-trained nurse, then placed her hands about 2 in. above the patient's body. Because Reiki involves the transfer of energy, both hands-on and hands-off techniques are acceptable methods to deliver the Reiki intervention.

To minimize distractions and approximate a quiet environment for the Reiki intervention, the cubicle light was dimmed, subjects were placed as far from other patients as possible, and the curtain was pulled around the patient's bed. Baseline data were collected in the preprocedure room, recorded in the patient's medical record, and transcribed onto the study data abstraction form.

Post-Reiki intervention (precolonoscopy) repeat measures of the physiologic measures and subjective measure of anxiety and pain were obtained. As described earlier, during this precolonoscopy time, both the experimental and control groups received usual colonoscopy care, including extensive education about what to expect before, during, and after colonoscopy. They were also educated about the protocol for sedation and pain management to minimize discomfort and pain during the procedure.

Intraprocedure, the PI recorded physiologic measures every 5 minutes during colonoscopy and every 15 minutes (for 30-60 minutes) thereafter in the recovery area. In addition to the baseline physiologic measures, episodes of nausea, vomiting, and signs and symptoms of anxiety such as body shaking, hand tremors, facial grimaces, and verbalization of pain were noted. Sedation dosing was also recorded.

Postprocedure, repeat physiologic measures were obtained, as well as repeat measures of pain and anxiety, using the self-report instrument. In addition, in the discharge area, a measure of satisfaction was obtained from the Reiki intervention group, using a Likert-type scale (0 = dissatisfied, 10 = extremely satisfied).

Data Analysis

Standard statistical methods, including frequencies, percentages, and chi-square analyses, were employed to compare outcomes between the two groups, using Stata statistical software, Version 8. Descriptive statistics were used to characterize the sample by age, gender, and comorbidity (other medical illnesses). Unadjusted analyses were performed to examine crude associations and between-group differences, using chi-square analyses for categorical variables and analysis of variance for continuous variables. The value of alpha (statistical significance) was set at the $\leq .05$ level.

Results

Twenty-four individuals were screened to participate in the study. Three were excluded because they were taking prescription anxiolytic medications; thus, 21 individuals participated in the study. The mean age of the sample was 58 years ($SD = 8.5$) and included equal representation of men and women. Approximately half of the sample had a history of hypertension. There were no significant differences between the groups on age, gender, or history of comorbid conditions, including hypertension, hypothyroidism, or gastroesophogeal reflux disease (GERD) (Table 1). There were also no significant differences between the groups on baseline physiologic measures, including heart rate, blood pressure, respirations, or self-reported measure of pain, although there was a trend for the experimental group to have higher values. There was a statistically significant difference between the groups in the self-reported measure of anxiety, with the experimental group reporting more symptoms of anxiety (Table 2).

Individuals randomized to the Reiki intervention demonstrated statistically significant reductions in measures of heart rate, respirations, and self-reported symptoms of anxiety post-Reiki compared with baseline. Changes in blood pressure and report of pain were not statistically significant compared with baseline (Table 3)

No significant between-group differences were observed postprocedure for either physiologic measures or self-reported measures of pain and anxiety. There was also no difference between groups in the amount of sedation required despite the fact that the intervention group had significantly higher levels of anxiety preprocedure.

Additional behavioral demonstration and verbal comments were collected prior to colonoscopy and during the procedure for both the experimental and control groups. Prior to the procedure, the most frequent comment was being "nervous." Intraprocedure, the most frequent discomfort voiced by both groups was stomach "cramping" or belly pain ("it hurts"), with a few patients in both groups sighing, moaning, grimacing, writhing in bed, and trying to pull the colonoscope out. In summary, both groups showed similar behavioral demonstration and verbal comments on discomfort/pain.

In the discharge area, individuals assigned to the Reiki intervention were asked to rate their overall satisfaction with the procedure and 90% reported that they were extremely satisfied. All intervention participants

TABLE 1. Demographic Distribution of the Sample

Variable	Control Group ($n = 10$)	Experimental Group ($n = 11$)	Total ($N = 21$)
Women, *n* (%)	5 (50)	6 (55)	11 (52)
Age in years, mean (*SD*)	58 (8.5)	58 (8.5)	58 (8.5)
Hx HTN, *n* (%)	5 (50)	6 (55)	11 (52)
Hx Hypothyroid, *n* (%)	1 (10)	2 (18)	3 (14)
GERD, *n* (%)	0 (0)	2 (18)	2 (10)

Note. GERD = self-reported history of gastroesophageal reflux; Hx HTN = self-reported history of hypertension; Hx Hypothyroid = self-reported history of hypothyroid.

TABLE 2. Significance of Between-Group Differences for Baseline Variables

Variable	Preprocedure		
	Control (n = 10)	Experimental (n = 11)	Between-Group Differences, p
Heart rate, beats/minute	78	81	.64
Systolic blood pressure, mmHg	134	146	.13
Diastolic blood pressure, mmHg	85	90	.42
Respirations/minute	18	18	.72
Anxiety	2.6	4.5	.03
Pain	0.2	0.8	.42

Note. Anxiety was measured on a scale of 0-10 (0 = no anxiety, 10 = extremely anxious). Pain was measured on a scale of 0-10 (0 = no pain, 10 = extreme pain). The value of alpha was set at $p \leq .05$.

said that they would recommend the Reiki therapy treatment prior to colonoscopy.

Discussion

Despite the popularity and emerging trend toward the use of alternative therapies, such as Reiki, the theoretical understanding of Reiki's effects is not well understood and there is limited research measuring its outcomes and effectiveness for use in invasive procedures such as colonoscopy. Results of this pilot study showed that individuals in the Reiki group achieved reductions in physiologic measures (blood pressure, heart rate, and respirations) and self-reported measures (pain and anxiety) after the Reiki intervention; however, our data did not show that the Reiki intervention had a significant effect on postprocedure physiologic measures, self-reported measures of pain and anxiety, or the amount of sedation required for the Reiki intervention group compared with the group that received usual care.

Of interest, although the groups were statistically similar at entry to the study, the Reiki group tended to have more comorbidities (including hypertension, hypothyroid, GERD) and self-reported symptoms of pain. An important difference was that the Reiki group was significantly more anxious at baseline than the control group. This may have occurred because anxious people were more likely to request assignment to the Reiki intervention in the hope of decreasing their anxiety prior to the procedure. Given that they had more comorbidities and baseline anxiety, one would have expected the Reiki group to have required more sedation during the procedure or to have elevated postprocedure physiologic and self-reported measures compared with the usual care group; however, this did not occur.

There are several limitations to this study that are inherent in pilot studies. The PI who collected the pre-postmeasures was not blinded to group assignment,

TABLE 3. Pre–Post Differences With Reiki Intervention (n = 11)

Variables	Preprocedure	Post-Reiki	p
Heart rate, beats/minute	81	72	.0002
Systolic blood pressure, mmHg	146	135	.12
Diastolic blood pressure, mmHg	90	85	.06
Respirations/minute	18	15	.0001
Anxiety	4.5	1.7	.0002
Pain	0.5	0.3	.30

Note. Preprocedure = baseline measure; Post-Reiki = measure immediately after Reiki intervention. Anxiety was measured on a scale of 0-10 (0 = no anxiety, 10 = extremely anxious). Pain was measured on a scale of 0-10 (0 = no pain, 10 = extreme pain). The value of alpha was set at $p \leq .05$.

which could lead to bias. There is no placebo attention-control intervention (sham Reiki) for the control group. Thus, we could not specifically identify the mechanism underlying the trends observed. Some patients randomized to the control group requested to be in the Reiki group, necessitating a modification of the design to a partially randomized patient preference design. This limits the generalizability of the findings but does demonstrate that for those patients who express interest in Reiki, the procedure does seem to provide some benefit. The sample was not large enough to permit controlling for confounders such as age, gender, medical and surgical history, individual pain and anxiety thresholds, and previous exposure or experience with alternative therapy. Individually and collectively these variables could contribute to the between-group differences observed. These limitations could readily be addressed in future research with a larger sample and research design that includes randomization, control, and blinded interventionists.

Another consideration is the issue of feasibility. Would busy, fast-paced endoscopy laboratories have time for this type of intervention? Although this is an important consideration, in view of the low rates of adoption of the life-saving procedure of colonoscopy, the simple, noninvasive Reiki treatment could make colonoscopy more acceptable and the benefit of Reiki may offset the cost (time). In this pilot study, more anxious patients were more likely to request the Reiki intervention, and the data suggest that they did not require additional sedation that could have prolonged their stay in the recovery area. Thus, time spent preprocedure relaxing them might decrease time to discharge and would have implications for the cost-benefit and feasibility of the intervention.

Conclusions

Endoscopic procedures, such as colonoscopies, can be anxiety-provoking and uncomfortable; hence, sedatives are normally used to make them more tolerable and the patients more comfortable. Anxious individuals may require higher doses of sedatives, which may, in turn, prolong recovery time and have potential for adverse effects. In addition, several studies have demonstrated that some individuals may prefer an adjunctive, nonpharmacologic intervention to minimize the amount of sedation used and increase their sense of control or partnership in care.

The findings of this pilot study provide some interesting observations on the use of Reiki pre-colonoscopy and merit further investigation. The data suggest that anxious people are more likely to participate in an adjunctive therapy. If this is the case, adding Reiki may increase the patients' satisfaction with care and overall colonoscopy experience, an important consideration in ensuring that patients return for follow-up procedures. Although reports of pain and changes in blood pressure were not statistically significant, the Reiki group had statistically significant reductions in both physiologic measures (heart rate and respiration) and self-reported measures of anxiety immediately after the Reiki intervention. This finding may indicate that with a larger sample size, the differences would have greater significance. Finally, despite higher baseline levels of anxiety and pain, the experimental (Reiki) group did not require more sedation, which has implications for adverse effects and cost. These pilot data provided some interesting observations and set the stage for conducting a rigorous, randomized, controlled, clinical trial to determine the effectiveness of Reiki as an adjunct therapy for endoscopic procedures.✪

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