Evidence-Based Yoga Interventions for Patients With Cancer

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Background: Introducing patients with cancer to the practice of yoga can be beneficial for coping with the side effects of treatment and the psychological aspects of cancer that are often difficult and distressing for patients. Oncology nurses can learn to use simple yoga techniques for themselves and as interventions with their patients.

Objectives: This article provides details about the development and implementation of a yoga class for patients with cancer and provides details about other ways nurses can integrate yoga into oncology nursing and cancer care.

Methods: Current research literature was reviewed and synthesized to provide support for the use of yoga as an evidence-based nursing intervention. A detailed approach for implementing yoga into professional practice was delineated.

Findings: Yoga techniques can be easily integrated into nursing practice and have been shown to be beneficial for patients and nurses.

The practice of yoga originated about 5,000 years ago; the term is from a Sanskrit word that means “to join or unite” (Baum, 2013). The practice combines physical postures, breathing exercises, meditation, and philosophy. Cancer and dealing with the side effects of cancer treatment can be extremely stressful physically, emotionally, and spiritually. The focus of yoga on the body, mind, and spirit makes it particularly helpful for individuals coping with cancer. An article published in Yoga Journal reported that many patients with cancer are turning to yoga because it helps them to realize how people with a serious illness, such as cancer, can connect to their body and begin to experience self-empowerment and well-being instead of “running away” from their threatened body (Boucher, 1999). With training, oncology nurses can learn to use yoga as an intervention to help patients decrease stress and alleviate side effects to improve quality of life and their sense of well-being.

The term stress was coined by Hans Selye in 1936, who defined it as “the non-specific response of the body to any demand for change” (American Institute of Stress, 2016, para. 1). Stress is neither positive nor negative; it is a subjective experience based on one’s perception of the degree of threat an event or experience poses. A cancer diagnosis is commonly perceived as a significant threat that can create severe stress and anxiety in patients and their families. In addition, the sequelae of cancer treatment with its accompanying discomfort and side effects can be extremely stressful for patients.

Literature Review

Yoga is one of the complementary health approaches that the National Institute of Health’s National Center for Complementary and Integrative Health (2013) recognizes as an increasingly popular and important therapy for which it provides information, education, and research support.

Nurses have a repertoire of evidence-based interventions to use to assist patients in managing their symptoms, ease untoward effects of treatment, and relieve the stress and...
anxiety that often accompany the cancer experience. Mind-body techniques, such as yoga, are becoming increasingly compelling because more patients with cancer in active treatment and cancer survivors have reported interest in using such therapies (Cooley & Grant, 2006; Fouladbaksh & Stommel, 2010). Evidence increasingly supports the effectiveness of yoga (Bower et al., 2011; Carlson & Bultz, 2008).

A growing body of support for yoga exists from randomized, controlled trials for improving quality of life, sleep, and mood in patients with cancer (Carlson & Bultz, 2008). The Society for Integrative Oncology published guidelines about the safety and effectiveness of complementary therapies for women with breast cancer. It gave yoga the top rating for evidence of improving mood in women undergoing radiation or chemotherapy, as well as for improving fatigue (Greenlee et al., 2014). In a randomized, controlled trial, a targeted yoga intervention led to significant improvements in fatigue and vigor among breast cancer survivors with persistent fatigue symptoms (Bower et al., 2011). Studies done by the Integrative Medicine Program at the University of Texas MD Anderson Cancer Center in Houston, Texas, found yoga to be beneficial in improving sleep outcomes, decreasing side effects of cancer treatment, improving physical functioning aspects of quality of life, and helping patients find meaning from the illness experience as they transition into cancer survivorship (Chaoul, Taniguchi, & Cohen, 2015).

Several systematic reviews have provided persuasive evidence of the efficacy of yoga as an intervention for patients with cancer (Buffart et al., 2012; Shiraz, Scherer, Snyder, Geigle, & Gotay, 2014; Zhang, Yang, & Wang, 2012) (see Table 1). A growing body of evidence exists from pilot and small research studies of women with breast cancer demonstrating that yoga can relieve symptoms and improve well-being (Bower et al., 2011; Carson et al., 2007; Raghavendra et al., 2007). Pilot and small studies have also begun to demonstrate the positive benefits of yoga for improving sleep quality in patients with lymphoma during active treatment (Cohen, Warneke, Fouladi, Rodriguez, & Choal-Reich, 2004) and among cancer survivors (Mustian et al., 2013).

Yoga is included as an intervention in the Oncology Nursing Society ([ONS], 2016) Putting Evidence Into Practice (PEP) guidelines. The PEP guidelines on yoga note that it has been examined as an intervention for anxiety, depression, chemotherapy-induced nausea and vomiting, hot flashes, cognitive impairment, sleep–wake disturbances, pain, and fatigue in patients with cancer, as well as for caregiver strain and burden. The PEP guidelines list yoga as “most likely effective” for fatigue and anxiety (ONS, 2016).

### Yoga as a Nursing Intervention

Many people identify yoga with only the physical postures (asana), but this is only one of the many tools used for healing in yoga. In the yoga sutra, Patañjali (2003) described yoga as consisting of eight interconnected limbs (see Table 2). Each of the limbs of yoga could also be described as a potential nursing intervention. For example, some patients with cancer may need encouragement to behave with nonviolence and compassion toward themselves and others (yama). Other individuals may need teaching in cleanliness or find themselves taking stock of their lives, a form of self-study (niyama). Nurses can learn and teach patients simple yogic poses (asana) and yogic breathing techniques (pranayama). Withdrawal of the senses may help individuals let go of external stimuli and sleep (pratyahara). Individuals who learn to concentrate and meditate may develop meaning in suffering and in the cancer experience (dharana and dhyana). By experiencing integration, individuals can experience oneness and joy, even when seriously ill or dying (samadhi) (Cameron, 2010).

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<thead>
<tr>
<th>TABLE 1. Effects of Yoga Compared to Control on Physical Health and Outcomes From Systematic Reviews</th>
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<td><strong>Study</strong></td>
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<td>Raghavendra et al., 2007</td>
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| a Large effect size (d = −0.69 to −0.75) |
| b Moderate effect size (d = −0.51) |
| c Moderate effect size (d = 0.33–0.49) |
| d Small effect size (d = 0.31) |
| e Moderate effect size (d = −0.38 to −0.57) |
| f Moderate effect size (d = 0.33–0.47) |
| g Moderate effect size (d = −0.54) |
| h Small effect size (d = 0.27) |
Oncology nurses can easily integrate yoga into their practice (see Table 3). Nurses can use yoga to be healthier and to be a healing presence. Nurses can also use yoga as part of an integrated care plan. Yoga and nursing are holistic and treat the entire individual, not just the disease. Some examples of when yoga interventions could be used are during a painful procedure, to help reduce anxiety while waiting for test results, or during chemotherapy administration to help reduce nausea. Deep breathing, postures, and mediation and relaxation are some of the more common yoga techniques used with patients with cancer.

**Yogic Breathing (Pranayama)**

Yoga pranayama, the science of breath, has many benefits for people with cancer. Diaphragmatic, yogic breathing can help reduce emotional stress caused by surgery, radiation, and chemotherapy. Many times, patients with cancer feel anxiety, fear, or lack of control. Nurses can teach their patients to use pranayama at those times, which may help to control these feelings. Nurses can learn yogic breathing techniques in yoga training programs. Diaphragmatic breathing can be done by anyone regardless of age or physical condition. It can also be practiced anywhere, including during chemotherapy administration or in a hospital bed. Yogic breathing acts as a cleanser. Cancer and chemotherapy can create toxic by-products in the body, and this type of breathing may help promote oxygenation (Boucher, 1999).

**Posture (Asana)**

Gentle, restorative yoga poses can help release tension and blocked energy from joints and organs, which may help patients experience a sense of greater well-being and improve sleep (Woodyard, 2011). Gentle yoga poses can also help clear out toxins accrued by cancer treatment, stimulate muscles, increase blood flow, balance the glands, and enhance lymphatic flow in the body, all of which enhance the body’s internal purification process (YOGAOnline.com, 2015).

Although regular exercise has been shown to stimulate the body’s natural anticancer defenses, some patients do not engage in a regular exercise regimen. Many find that gentle, restorative yoga poses provide an ideal, balanced form of whole-body exercise (Sudarshan et al., 2013). Asana is also helpful in increasing range of motion postoperatively after some cancer surgeries, such as mastectomy.

**Meditation (Dhyana)**

Meditation and guided imagery may reduce anxiety and be deeply relaxing for patients with cancer. According to Simon (1999), meditation techniques are designed to interrupt the endless mental conversations that occur. Simon (1999) stated that, “when facing the stress of a serious illness, we compound the anguish in both our bodies and our minds through obsessive thoughts and corresponding anxiety we feel in our bodies” (p. 104). During meditation, one can experience a state of awareness that is not dependent on the thoughts that occupy the mind. Simon (1999) suggested using a process in which one places the awareness on his or her breath to transcend the incessant inner dialogue that keeps the mind and body activated. Nurses can use this breath awareness meditation with their patients or instruct them on how to use it.

**Yoga Information and Support in Cancer Centers**

Several cancer centers offer educational sessions and support their patients and staff in complementary health approaches, such as the practice of yoga (see Figure 1). For example, the Integrative Medicine Center at the University of Texas MD Anderson Cancer Center provides information for healthcare professionals and patients about the current understanding of complementary medicine and how to integrate these therapies with conventional treatments, where appropriate. In addition, other cancer centers are beginning to offer yoga, integrative treatments, and mind-body techniques to their patients for symptom management and to improve quality of life.

**Yoga Classes for Patients With Cancer**

As nurses gain knowledge and experience with yoga through training and practice, they may want to start a class for patients, their family members, or other nurses to further promote some of the more common yoga techniques. The first author of the current article is a certified YogaNurse® and developed a weekly, one-hour yoga class for cancer survivors and their family members at Memorial Hermann Greater Heights Hospital in
TABLE 3. Examples of Nursing Interventions and Anticipated Patient Outcomes

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<th>Nursing Intervention</th>
<th>Evaluation</th>
<th>Patient Outcomes</th>
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<td>Teach the patient how to use diaphragmatic breathing before cancer treatments.</td>
<td>The patient uses diaphragmatic breathing before cancer treatments and reports decreased anxiety and stress.</td>
<td>The patient will use diaphragmatic breathing to help reduce emotional stress caused by surgery, radiation, or chemotherapy.</td>
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<td>Teach or guide the patient in gentle stretching yoga postures.</td>
<td>The patient’s requirement for pain medication is stabilized and then decreased with use of gentle stretching exercises. The patient begins to participate in activities previously limited by pain or decreased range of motion.</td>
<td>The patient will demonstrate stable or decreased pain, or increased range of motion as a result of gentle stretching (yoga asana).</td>
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<td>Lead the patient in the guided breathing awareness meditation. Evaluate for changes in anxiety, tension, and other manifestations of the stress response.</td>
<td>The patient reports decreased anxiety, tension, and other manifestations of the stress response as evidenced by normal vital signs; a slow, deep breathing pattern; and decreased anxious behaviors.</td>
<td>The patient will demonstrate decreased anxiety, tension, and other manifestations of the stress response as a result of guided breathing awareness meditation.</td>
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Houston, Texas. After approval from the hospital administration and the cancer committee, a classroom space was reserved for the classes, and flyers were created and distributed to doctors’ offices and to newly diagnosed patients with cancer. Participants are required to get approval from their doctor and sign a release before attending the free classes. Participants were instructed to wear loose, comfortable clothing and to bring water to the sessions. They were encouraged to practice at their own pace, and they were not required to have any previous yoga experience, be coordinated, or even feel good to come to class.

A typical class has 10–15 participants, and the classroom is set up with a circle of chairs, dimmed lights, and relaxing music playing. Participants are told to listen to their bodies and not to do anything that does not feel good. Class starts with a few moments to ground oneself and turn attention inward. Next, breathing exercises are explained and practiced. Participants are then led through gentle poses that are all done in a chair to reconnect them with their bodies. Finally, participants are guided through relaxation and meditation.

Feedback from participants has been positive. One participant, a breast and lung cancer survivor, stated, “I do everything possible to keep my immune system up. The chair yoga and meditation I find essential for my well-being.” Another participant being treated for non-Hodgkin lymphoma with two more chemotherapy cycles remaining was experiencing discomfort from her port and rib pain as the result of a car accident she and her husband had on the way home from the hospital. She stated that the breathing exercises she learned in the yoga class helped ease her pain. Another participant stated attending the yoga class with other people with cancer also has emotional benefits. The participant said, “Yoga class is like a support group since the participants are going through the same kinds of experiences and can relate to one another.”

Yoga Training

Many training programs exist for yoga teachers throughout the country. These programs range from a few days to more than two years. No official licensing requirements for yoga exist in the United States. Teacher training programs that meet certain standards are registered by Yoga Alliance, a nationally recognized organization. Two levels of Yoga Alliance (2016) certificates exist, 200-hour and 500-hour certificates, referring to the length of the program.

Yoga and Oncology Professionals

Some institutions are offering yoga-based symptom management for healthcare professionals. The Oregon Health and Science University Knight Cancer Institute in Portland offers a yoga-based symptom management training for oncology professionals, which explores a variety of simple and safe breathing techniques, mindfulness strategies, and other yoga-based symptom management tools that can be applied to patients’ needs. The training can also be integrated into the use of tools and care of patients with cancer without the need for prolonged training. This is a great option because oncology professionals already have knowledge about cancer and how to care for patients with cancer. The training allows them to learn yoga-based techniques that they can safely use with their patients without having to go to yoga teacher training.

Using Yoga in Nursing

Nurses already use many evidence-based interventions to help their patients deal with the side effects of cancer treatment. With training, nurses can incorporate yoga into their practice as part of an integrated care plan. About 400 nurses have trained in YogaNursing®. Many have begun to teach yoga to patients and their families in hospitals, outpatient clinics, and private sessions.

YogaNursing as a practice is relatively new and was created by Annette Tersigni, RN, a holistic health nurse and medical yoga therapist (YogaNurse® Academy, 2016). YogaNursing unites the ancient wisdom of yoga with the modern science of nursing and is a holistic nursing adjunct therapy designed for nurses and their patients. It consists of deep breathing techniques, seated stretches, gentle movement, and relaxation techniques.

Training in YogaNursing is a way for oncology nurses to reduce their stress and take care of themselves so that they can give optimal attention to their patients and remain safe and effective in their care provision. Training is available for a cost in a digital format or in person. Once nurses learn to use YogaNursing techniques, they can use them with patients. Physiologic benefits for patients and nurses include improved...
immune system, reduced muscle tension and pain, improved sleep, increased cardiovascular efficiency, reduced blood pressure, and improved digestion. Psychological benefits of YogaNursing include improved concentration, attention, mood, and sense of well-being; decreased anxiety, internal stress, and depression; and increased self-acceptance and self-actualization (YogaNurse Academy, 2016).

Nurses do not have to be yoga teachers to teach the YogaNursing Essentials, a program that was designed so that any nurse will be competent and qualified to teach the simple techniques (YogaNurse Academy, 2016). After training in the YogaNursing Essentials, nurses can go on to become a certified YogaNurse, which allows them to teach other nurses YogaNursing. Becoming a certified YogaNurse requires course completion, as well as 200-hour yoga teacher training (YogaNurse Academy, 2016).

Measurement of Outcomes

Nurses can measure outcomes of yoga interventions by asking individuals how they feel during and after yoga. Optimal benefits are obtained with regular practice. Often, immediate benefits, such as decreased stress and anxiety, will also be experienced by patients. Additional positive outcomes that have been reported include reduced fatigue (Taso et al., 2014), enhanced spiritual well-being (Duncan, Leis, & Taylor-Brown, 2008), and improved flexibility (Sudarshan et al., 2013).

Safety Considerations

Patients with cancer should alert their healthcare providers before starting any type of therapy that involves movement of the joints and muscles. Participants must listen to their bodies and not force any postures or overdo their yoga practice. The techniques taught in YogaNursing are gentle poses and stretching techniques that are appropriate for anyone and can be modified as needed. Learning the contraindications for particular poses is part of the training. Yoga practices can be modified to allow even those who are bedridden or chair-bound to participate. For those unable to do any physical postures, simple breathing or meditation techniques can be substituted. For women with lymphedema, arm support and a supportive wrap may be necessary to prevent swelling (Chapman, 2007).

Conclusion

The practice of yoga can offer physical, psychological, and spiritual benefits for patients with cancer and nurses. Several systematic reviews and a growing number of pilot and small research studies have found that yoga use by patients with cancer has many positive benefits. The information in this article is aimed to encourage oncology nurses to recognize the potential value for patients and caregivers, and to motivate them to incorporate yogic principles into their daily routines to the holistic integrated care for themselves and their patients.

References

The yogic prescription for health and healing (pp. 207–224). New York, NY: Bantam Dell.


