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# The Benefits of Medical Qigong in Patients With Cancer: A Descriptive Pilot Study

Janine Overcash, PhD, GNP-BC, Kathryn M. Will, MSW, LISW-S, and Debra Weisenburger Lipetz, BFA



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Medical Qigong (MQ) is a mind-body exercise that includes movement and meditation and is beneficial in reducing high blood pressure, high cholesterol, anxiety, stress, pain, and incidence of falls. The purpose of the current study was to determine whether patients with cancer and survivors who participated in an MQ class experienced a change in fatigue, depression, and sleep from a preintervention evaluation to a postintervention evaluation. Participants were patients diagnosed with cancer who participated in MQ classes. Some were actively undergoing cancer treatment (e.g., surgery, hormone therapy, radiation therapy, chemotherapy) and some were receiving no treatment. Patients diagnosed with cancer and enrolled in an MQ class were invited to participate. A packet of surveys was completed before the first class and before the final class.

Scores showed a reduced depression score after completing the five-week MQ course. Those findings indicate that MQ is helpful in reducing some of the problems associated with cancer and cancer treatment.

Janine Overcash, PhD, GNP-BC, is the director of the Department of Nursing Research, Kathryn M. Will, MSW, LISW-S, is the director of the JamesCare for Life program, and Debra Weisenburger Lipetz, BFA, is a certified Zhineng Qigong teacher, all at Ohio State University Comprehensive Cancer Center—Arthur G. James Cancer Hospital and Richard J. Solove Research Institute in Columbus. The authors take full responsibility for the content of the article. The authors did not receive honoraria for this work. The content of this article has been reviewed by independent peer reviewers to ensure that it is balanced, objective, and free from commercial bias. No financial relationships relevant to the content of this article have been disclosed by the authors, planners, independent peer reviewers, or editorial staff. Overcash can be reached at [janine.overcash@osumc.edu](mailto:janine.overcash@osumc.edu), with copy to editor at [CJONEditor@ons.org](mailto:CJONEditor@ons.org). (Submitted December 2012. Revision submitted March 2013. Accepted for publication April 14, 2013.)

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**A** cancer diagnosis can have a great impact on overall quality of life (QOL) (Sun et al., 2012). Symptoms such as fatigue, insomnia, and anxiety commonly are reported as inter-related issues for patients with cancer (Jim et al., 2011). About 83% of Americans have used complementary or alternative medicine (CAM) to alleviate symptoms from cancer and its treatment (Cassileth & Deng, 2004). Medical Qigong (MQ), a type of CAM that includes movement and meditation, reduces anxiety, stress, and pain, as well as high blood pressure, cholesterol, and incidence of falls (Jahnke, Larkey, Rogers, Etnier, & Lin, 2010; Ng & Tsang, 2009; Rogers, Larkey, & Keller, 2009; Skoglund & Jansson, 2007; Skoglund, Josephson, Wahlstedt, Lampa, & Norbäck, 2011). The authors sought to identify options for symptom relief for patients with cancer and survivors. Therefore, the purpose of the current study was to determine if scores on sleep quality, depression, and fatigue improved after the completion of a five-week MQ class. The type of Qigong used for this project was Zhineng Qigong.

## Background

### Qigong

Qigong was developed 5,000 years ago as a fundamental traditional Chinese medicine, and it uses physical activity and meditation to harmonize the body and spirit (Péiwen, 2003). Qigong theorizes that illness results from a blockage of energy flow in the human body. A free flow of Qi (i.e., energy) improves health and prevents disease (Chen & Yeung, 2002). Western medicine has compared Qigong to the relaxation response theory (Benson & Klipper, 1975) and the theory of psychoneuroimmunology (Ader, Cohen, & Felten, 1995).

Qigong is a generic term that encompasses thousands of forms of exercise, such as martial arts, meditation, and MQ. What differentiates Zhineng Qigong from other forms of MQ is the integration of the Qi. Through the practice of Zhineng Qigong, an exchange occurs between nature's Qi and human Qi that results in a cleansing of the physical body and enhanced mental clarity (National Qigong Association, 2013).

MQ includes movement, controlled breathing, postures, and meditation, and can be practiced as part of a class or alone. Very few risks are associated with MQ, and the potential benefits can have a positive effect on the physical and mental health of patients with cancer.

MQ's ability to relieve symptoms such as depression and fatigue may be from an integrated hypothalamic response resulting in homeostasis of the sympathetic and parasympathetic nervous system (Tsang, Lee, Au, Wong, & Lai, 2013). Qigong is a well-developed system of theory and practice that incorporates highly defined movements and visualization techniques with the intention of stress reduction. Qigong was used from 1980-1997 for a large Chinese government study that inspired widespread use to improve health and QOL (Specia, Carlson, Goodey, & Angen, 2000). MQ is used with activities such as yoga and tai chi in supportive oncology research and practice (Jahnke, Larkey, Rogers, Etnier, et al., 2010; Oh et al., 2011, 2012).

### Benefits of Qigong

Health benefits such as decreases in pain, insomnia, and depression are associated with practicing MQ (Fouladbaksh & Stommel, 2010). MQ is practiced by all ages, ethnicities, and genders. Several studies have focused on older adults who routinely practice MQ (Jahnke, Larkey, & Rogers, 2010; Stenlund, Lindström, Granlund, & Burell, 2005) as well as young, college-aged athletes (Wright, Innes, Alton, Bovbjerg, & Owens, 2011).

MQ ameliorates perceptions of sleep quality, chronic fatigue, and vitality (Craske, Turner, Zammit-Maempe, & Lee, 2009; Jahnke, Larkey, & Rogers, 2010). Gait speed and functional reach also are enhanced as a result of the regular practice of MQ (Wolf et al., 2006). Anxiety is reduced by 12% when MQ is practiced for 30 minutes (Johansson & Hassmén, 2008) and 26% when practiced for 60 minutes (Lee, Jeong, et al., 2003). Studies have found that MQ increases oxygen production, reduces inflammation, and enhances the immune response by increasing monocyte and lymphocyte numbers (Lee, Huh, et al., 2003; Lee, Jeong, et al., 2003; Lee, Kang, Ryu, & Moon, 2004). Cortisol levels tend to decrease over time when MQ is practiced for 12 weeks (Tsang, Tsang, et al., 2013). Mood and fatigue also have been shown to be positively affected as a result of MQ; however, many studies included small sample sizes, so more research is necessary (Dobos, Kirschbaum, & Choi, 2012; Oh et al., 2011).

### Medical Qigong in Patients With Cancer

Several studies of MQ have been performed specific to patients with cancer. MQ has been found to enhance cognitive function as evidenced by increased Functional Assessment of Cancer Therapy-Cognitive Function scores and European Organisation for the Research and Treatment of Cancer scores (Oh et al., 2012). Exercise (e.g., walking, cycling, Qigong, resistance training, strength training, yoga) for patients diagnosed with cancer is beneficial in QOL domains (e.g., fatigue, body image, pain, anxiety, body image, sleep) (Mishra, Scherer, Geigle, et al., 2012). Depression, anxiety, and complaints of fatigue are reduced when patients practice MQ (Oh et al., 2010; Wang & Ye, 2002). For patients receiving chemotherapy, cognitive function is improved and

C-reactive protein markers are reduced (Oh et al., 2012). When practiced regularly for 21 days, MQ also reduces leukopenia in patients with breast cancer receiving chemotherapy (Yeh, Lee, Chen, & Chao, 2006). Symptom distress is reduced specific to unwillingness to live and hopelessness in patients receiving chemotherapy (Lee, Chen, & Yeh, 2006). In addition to psychosocial and physical benefits, survival benefits are attributed to MQ as determined in a systematic review of controlled clinical trials (Lee, Chen, Sancier, & Ernst, 2007). The current study adds to the literature because of the participation from all types of patients with cancer and survivors, including those in active treatment (e.g., chemotherapy, radiation therapy, hormone therapy) and those no longer receiving treatment.

## Methods

The current study used a descriptive pre- and post-test design. Patients with cancer who attended MQ classes during 2011 and 2012 at the Ohio State University Comprehensive Cancer Center-Arthur G. James Cancer Hospital and Richard J. Solove Research Institute were invited to participate in the study. The 38 participants were patients with cancer and survivors who were either actively undergoing some type of cancer treatment (e.g., surgery, hormone therapy, radiation therapy, chemotherapy) or not undergoing treatment. Inclusion criteria included participants who were aged at least 18 years and able to speak and read English. Exclusion criteria included participants cognitively unable to consent, understand English, or understand the consent process.

### Instruments

The Brief Fatigue Inventory (BFI), an acceptable subjective tool for patients with cancer, was used to assess fatigue (Mendoza et al., 1999). This instrument consists of nine items, each having a numerical rating from 0-10 that are summed to calculate a global score. A higher score indicates worse fatigue. Three items define the severity of fatigue, and the remaining items consider the extent to which fatigue affects daily activities. Construct validity assessed for the nine items ranged from 0.81 (usual fatigue) to 0.92 (activity). Concurrent validity was evaluated with the

TABLE 1. Sample Characteristics (N = 38)

Characteristic	$\bar{X}$	SD	Range
Age (years)	57.63	11.3	36-75
Characteristic	n		
<b>Treatment type</b>			
No treatment	17		
Chemotherapy	5		
Radiation and chemotherapy	5		
Hormone	4		
Chemotherapy and hormone	2		
Surgery	2		
Radiation	1		
Radiation and hormone	1		
Radiation, chemotherapy, and hormone	1		

**TABLE 2. Pre- and Postintervention Means for Quality-of-Life Surveys**

Survey	Total Sample			Participants Who Completed Surveys at Both Time Points		
	n	$\bar{X}$	SD	n	$\bar{X}$	SD
Pre-PSQI	33	6.48	4.58	15	5.33	2.74
Post-PSQI	16	4.88	2.87	15	4.67	2.85
Pre-CES-D	38	14.13	11.72	19	12.68	9.7
Post-CES-D	19	7.47	6.29	19	7.47	6.29
Pre-BFI	38	2.74	2.24	19	2.58	1.82
Post-BFI	19	1.83	1.75	19	1.83	1.75

BFI—Brief Fatigue Inventory; CES-D—Center for Epidemiologic Studies–Depression scale; PSQI—Pittsburgh Sleep Quality Index

Functional Assessment of Cancer Therapy–Fatigue scale and the Profile of Mood States–Fatigue subscale, with strong correlations. Cronbach coefficient alphas showed high reliability (> 0.95).

The Center for Epidemiologic Studies–Depression (CES-D) scale is a 20-item survey used to assess depressive symptoms. Internal consistency is 0.9 in people who are hospitalized and 0.85 in people who live in the community. CES-D has a test-retest reliability of 0.54 and a high correlation with other instruments that measure similar symptoms. People who score a total of 16 or higher are considered depressed and require additional assessment (Radloff, 1977).

The Pittsburgh Sleep Quality Index (PSQI) (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989) contains seven components and is used for measuring sleep quality. The PSQI measures quality of sleep, sleep latency, sleep duration, efficiency, disturbances, use of sleep medication, and daytime sleep dysfunction. Scores range from 0–21, with higher scores indicating worse sleep quality. A score greater than 5 indicates poor sleep. The PSQI has a sensitivity of 0.89% and a specificity of 0.86% (Buysse et al., 1989).

### Procedures

All patients who signed up to take an MQ class were invited to participate in the study. Informed consent was obtained prior to data collection. A packet was provided to the participants before their first class and again prior to their last class. The packet included the BFI, CES-D, and PSQI, and it required 15–20 minutes to complete. Patients were able to ask questions concerning any of the items on the questionnaires. After distribution, the principal investigator waited until everyone completed the surveys and collected all of the study packets.

All patients participated in a 1.5-hour MQ class for five weeks. The MQ class consisted of specific series of movements combined with visualizations for relaxation. The first class introduced the history of Qigong and the experience of creating Qi. Consecutive classes consisted of creating Qi and physical movements. Patients were encouraged to practice MQ as much as possible outside of class.

### Data Analysis

Descriptive statistics were used to determine mean scores of each of the instruments. Statistical testing was used to compare preintervention scores to postintervention scores on the BFI, CES-D, and PSQI. Because all measures are continuous, a paired t test was conducted to determine whether the average participant experienced a significant increase in the average score.

### Results

The sample consisted of 38 participants and the mean age was 58 years (range 36–75 years) (see Table 1). Thirty-nine patients with cancer and survivors took the class, but one person refused participation. All 38 participants completed the preintervention packet, and 22 completed the postintervention packet. Sixteen participants did not attend the last class. Fifteen participants completed the pre- and postintervention PSQI, 19 completed the pre- and postintervention CES-D and BFI. Pre- and postintervention means for each survey can be found in Table 2. The CES-D scores were significantly different at pre- and postintervention, but the remaining survey scores were not (see Table 3).

### Discussion

The participants were relatively active, and most were women and receiving no treatment for cancer. Many of the participants had positive outlooks concerning their diagnoses and reported having adequate social support. The participants often attended not only the MQ classes, but many other educational opportunities and were motivated to learn about alternative methods to achieve better QOL and health.

Although only the CES-D scores were significantly improved postintervention, all of the scores were more favorable after the MQ classes. The participant mean scores of all the surveys were positive pre- and postintervention. Sleep scores were the least improved following the classes. Those results are not consistent with other studies that have found MQ to be effective in enhancing sleep quality (Craske et al., 2009; Jahnke, Larkey, Rogers, Etnier, et al., 2010; Lynch, Sawynok, Hiew, & Marcon, 2012). That finding may be because the scores at the beginning of the classes showed only slight sleep problems.

A reduction in depression screening scores with the use of MQ has been shown in previously published literature in addition to the current study (Tsang, Tsang, et al., 2013). However, the current study conducted the MQ intervention for five weeks compared to others that were performed for 12 weeks, which

**TABLE 3. Paired Samples Test**

Variable	t	df	p <sup>a</sup>
Pre- and post-PSQI scores	0.85	14	0.41
Pre- and post-CES-D scores	3.38	18	—
Pre- and post-BFI scores	2	18	0.06

<sup>a</sup> p values are two-tailed.

BFI—Brief Fatigue Inventory; CES-D—Center for Epidemiologic Studies–Depression scale; PSQI—Pittsburgh Sleep Quality Index

## Implications for Practice

- ▶ Educate patients with cancer about Medical Qigong (MQ), a mind-body exercise that includes movement and meditation.
- ▶ Inform patients that MQ, when practiced for five weeks, can decrease reports of depression.
- ▶ Encourage patients with cancer and survivors to practice MQ because it can be used in any phase of treatment.

indicates that a reduction in depression could occur over a shorter time period. MQ is a practice that gradually changes the mental paradigm, thus altering perceptions of some of the challenges that arise with a diagnosis of cancer and cancer treatment. MQ can help cultivate consciousness, which can transform self and result in enhanced notions of well-being and a more positive outlook for the future.

Many participants enjoyed MQ and socializing while attending the weekly five-class course. Exercise has beneficial effects on QOL in patients with cancer (Mishra, Scherer, Snyder, et al., 2012). The group generally enjoyed sharing events from their lives and aspects of cancer and cancer treatment. Attending a routine, enjoyable function may have a positive effect on mood, sleep, and QOL, regardless of the topic of instruction.

## Limitations

Limitations of the current study included the small sample size and that the study design did not include a randomized sample. Participation in exercise interventions can be low, as shown in the current study. About half ( $n = 16$ ) of the participants did not complete all five Qigong classes, which resulted in a low number of completed post-intervention surveys. The authors did not examine the differences between the group who completed all of the classes and those who did not. In addition, the effects inspired by the MQ class cannot be separated from the benefits of social support many participants experienced as a result of attending the classes. This study provides preliminary data, and it serves as a basis for additional research.

## Implications for Nursing

Offering alternative therapy classes such as MQ can be very helpful to patients who have been diagnosed with cancer. Hiring a certified MQ instructor may require additional work, but the benefits of offering the class are considerable. Nurses can encourage patients and families to participate in group activities such as MQ to reduce the stress and anxiety that accompany a cancer diagnosis. Educating patients and families about the benefits of CAM options could help them find ways to alleviate symptoms. In addition to MQ, yoga (Buffart et al., 2012), tai chi (Field, Diego, Delgado, & Medina, 2013), and general exercise also reduce some of the stressors associated with a diagnosis of cancer.

## Conclusions

MQ is a mind-body exercise that can be performed by patients with cancer in any phase of treatment. Depression scores

from the CES-D were improved after a five-week MQ class. MQ is a reasonable CAM activity that has the potential to be beneficial for patients with cancer.

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