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Effects of meditation on anxiety, depression, fatigue, and quality of life of women undergoing radiation therapy for breast cancer[☆]



Yeon Hee Kim^{a,1}, Hwa Jung Kim^{b,1}, Seung Do Ahn^c,
Yun Jeong Seo^d, So Hee Kim^{a,*}

^a Department of Nursing, Asan Medical Center, Seoul, Republic of Korea

^b Department of Epidemiology and Biostatistics, Asan Medical Center, Seoul, Republic of Korea

^c Department of Radiation Oncology, Asan Medical Center, Seoul, Republic of Korea

^d Dahnworld Korea, Seoul, Republic of Korea

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Summary

Objective: To investigate the effects of meditation on anxiety, depression, fatigue, and quality of life in women who are receiving radiation therapy for breast cancer.

Design: Randomized, non-program controlled, parallel intervention clinical trial.

Setting: The ASAN Cancer Center located in Seoul, Korea.

Intervention: The subjects of this study included 102 female breast cancer patients who had undergone breast-conserving surgery; these female patients were randomized into equally assigned meditation control groups, with each group consisting of 51 patients. The test group received a total of 12 meditation therapy sessions during their 6-week radiation therapy period, and the control group underwent only a conventional radiation therapy.

Outcome: The tools used to evaluate the effects of meditation were Hospital Anxiety and Depression scale, Revised Piper Fatigue scale, and European Organization for Research and Treatment of Cancer-Quality of Life Core-30. The results were analyzed based on the principles of intention-to-treat analysis, and, as a corollary analysis, per-protocol analysis was conducted.

Results: The breast cancer patients who received meditation therapy compared with the non-intervention group saw improvements in reduction of anxiety ($p = .032$), fatigue ($p = .030$), and improvement in global quality of life ($p = .028$).

Conclusions: Based on the results of this study, an affirmation can be made that meditation can be used as a non-invasive intervention treatment for improving fatigue, anxiety, quality of life, and emotional faculties of women with breast cancer.

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* Corresponding author at: 1F West Bldg., Cancer Education Center, Asan Medical Center, 88, Olympic-ro, Songpa-gu, Seoul 138-736, Republic of Korea. Tel.: +82 2 3010 1127; fax: +82 2 3010 1158.

E-mail address: holiday09@naver.com (S.H. Kim).

¹ Both authors contributed equally to this study.

Introduction

Although radiation therapy, which is conducted as an adjuvant treatment after a breast-conserving surgery, lowers the rate of recurrence and increases disease-free survival rate.¹ The patients are subject to experiencing several side effects during the treatment process itself. In particular, along with various physical side effects, as a result of long-term treatment and uncertainty, emotional and social problems such as anxiety and depression can be experienced.² Additionally, in cases of women with breast cancer, emotional symptoms including depression have been shown to become aggravated depending on the progress of radiation therapy.³ In addition, cancer-related fatigue is a common side effect appeared by 30–80% of cancer patients receiving radiation therapy, regardless of the irradiation area.⁴ Also, cancer-related fatigue is one of the most common side effects experienced by women breast cancer patients receiving post-surgery adjuvant radiation therapy.⁵ According to previous studies, in cases of women with breast cancer undergoing radiation therapy treatment, as their treatment progressed, their fatigue levels continued to worsen.^{6,7} In the last week of treatment their fatigue levels reached the maximum level, and 3–6 months after the completion of treatment the fatigue levels were found to be reverting back to the pre-treatment levels; also, the patient's quality of life was found to be negatively affected.^{6,7} Moreover, according to the results of a study that examined the symptom clusters associated with treatment for patients with breast cancer, because their depressed mood, cognitive impairment, fatigue, insomnia, and pain all appeared to be related, it is necessary to consider the potential correlation among the symptoms when assessing and planning for the management in breast cancer patients.⁸ As shown, fatigue, anxiety, and depression are typical psychological and physical side effects experienced by women with breast cancer, and it can be stated that these symptoms require aggressive intervention along with treatment.

Meditation is one of the alternative therapies soften practiced in many fields as a non-pharmacological intervention therapy,⁹ and it is known to be helpful in terms of controlling depression, anxiety, sleep disturbances, pain, fatigue, and stress levels in cancer patients.^{10,11} Recently (in Korea as well), as an alternative therapy for cancer patients, research on meditation is being attempted, In the case of mindfulness meditation, it is currently one of the methods included as part of the non-pharmacological recommendations of the Version 1¹² Distress Management Recommendations of the Korea National Cancer Center for the improvement of quality of life in cancer patients.

Meditation is diverse in its types and has been developed to suit local features and physical characteristics; therefore, in order for meditation to be studied in Korea so that it can be applied in clinical settings, it would be preferable to use traditional Korean discipline techniques.¹³ Brain Wave Vibration (BWV) meditation was previously known as "Body and Brain Holistic Fitness Training" or "Dahn yoga"¹⁴ and is one of the traditional meditation methods in Korea. BWV is believed to be most beneficial when practiced as part of a holistic fitness class in combination with other related yoga-style exercises.¹⁵

This meditation was developed in South Korea by Il-Chi Lee in the 1980s, and is designed to optimize body and brain health, as well as rebalance the energy systems of the body.¹⁶

Although the Brain Wave Vibration meditation has not been attempted on cancer patients, several previous studies^{17–19} reported its effectiveness in reducing anxiety and dealing with stress. According to a previous study,¹⁵ Brain Wave Vibration meditation reported improvement in depression and sleep latency. In the study, ordinary college students were divided into 3 groups and were administered with the Brain Wave Vibration meditation, Iyengar yoga, and mindfulness meditation; the results of these experiments showed that the Brain Wave Vibration group experienced improvement in depression and sleep latency. In another randomized study on the general public, it showed that there were significant effects in reducing stress and enhancing overall positive outlook.²⁰

Based on all of this, by applying the Brain Wave Vibration meditation on women with breast cancer in this study, we attempted to analyze the effects on their anxiety, depression, fatigue, and quality of life.

Participants and methods

This study is an open-label, randomized clinical trial investigating the effects that meditation has on anxiety, depression, fatigue, and quality of life in women who are receiving radiation therapy for breast cancer. This study was undertaken only after obtaining approval (IRB approval number: S2011-0179-0002) from the IRB of Asan Medical Center in Seoul, Korea; all participants took part in the study after providing written consent.

Participants

Eligible participants included women aged 20 or over with breast cancer, all of whom started radiation therapy after a breast conserving operation, understand the purpose of the study, and agreed to participate. Exclusion criteria included receiving psychiatric treatment, or patients with metastasis or recurrence. Also, those who participated in another study related to distress or quality of life were excluded.

The participants in the study were comprised of 102 female cancer patients who were receiving radiation therapy after breast conserving operation at the outpatient unit of "Asan Medical Center" general hospital located in Seoul, Korea.

Intervention

The meditation used in this study is Brain Wave Vibration meditation. This is based on the Korean traditional exercise "Danhak" which is a traditional Korean training technique. "Danhak" transformed into a training system that promotes change in mind and body with the brain at the center, and is comprised of simple movements and techniques so that anyone can use it.^{14,18} This is a modern brain health technique that combines simple movements, such as lightly shaking one's head side-to-side, movements of a part of the

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