



# A clinical randomized controlled trial of music therapy and progressive muscle relaxation training in female breast cancer patients after radical mastectomy: Results on depression, anxiety and length of hospital stay

Kaina Zhou<sup>a</sup>, Xiaomei Li<sup>a,\*</sup>, Jin Li<sup>a</sup>, Miao Liu<sup>d</sup>, Shaonong Dang<sup>b</sup>, Duolao Wang<sup>c</sup>, Xia Xin<sup>d</sup>

<sup>a</sup> Department of Nursing, Xi'an Jiaotong University Health Science Center, Xi'an, Shaanxi, PR China

<sup>b</sup> Department of Epidemiology and Biostatistics, School of Public Health, Xi'an Jiaotong University Health Science Center, Xi'an, Shaanxi, PR China

<sup>c</sup> Department of Medical Statistics, Faculty of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, UK

<sup>d</sup> Department of Nursing, First Affiliated Hospital, Xi'an Jiaotong University, Xi'an, Shaanxi, PR China

## A B S T R A C T

### Keywords:

Breast cancer  
Music therapy  
Progressive muscle relaxation training  
Anxiety  
Depression  
Radical mastectomy

**Purpose:** To examine effects of music therapy and progressive muscle relaxation training on depression, anxiety and length of hospital stay in Chinese female breast cancer patients after radical mastectomy.

**Methods:** A total of 170 patients were randomly allocated to the intervention group ( $n = 85$ ) receiving music therapy and progressive muscle relaxation training plus routine nursing care and the control group ( $n = 85$ ) receiving routine nursing care. Music therapy and progressive muscle relaxation training were performed twice a day within 48 h after radical mastectomy, once in the early morning (6a.m.–8a.m.) and once in the evening (9p.m.–11p.m.), for 30 min per session until discharged from the hospital.

**Results:** A general linear model with univariate analysis showed that the intervention group patients had significant improvement in depression and anxiety in the effects of group ( $F = 20.31, P < 0.001$ ;  $F = 5.41, P = 0.017$ ), time ( $F = 56.64, P < 0.001$ ;  $F = 155.17, P < 0.001$ ) and group\*time interaction ( $F = 6.91, P = 0.009$ ;  $F = 5.56, P = 0.019$ ). The intervention group patients had shorter length of hospital stay ( $12.56 \pm 1.03$ ) than that of the control group ( $17.01 \pm 2.46$ ) with statistical significance ( $F = 13.36, P < 0.001$ ).

**Conclusion:** Music therapy and progressive muscle relaxation training can reduce depression, anxiety and length of hospital stay in female breast cancer patients after radical mastectomy.

© 2014 Elsevier Ltd. All rights reserved.

## Introduction

Breast cancer is the most common malignant tumor in the female population, with 1.40 million women diagnosed worldwide and 170,000 diagnosed in China (Zhang et al., 2013). Due to the negative consequences of a cancer diagnosis and the sequelae of

cancer-related treatments, 20%–30% breast cancer patients suffer from depression and anxiety, which is significantly higher than the corresponding prevalence of depression and anxiety (6%–8%) in a population of healthy women (Björneklett et al., 2012). In China, the prevalence of anxiety, depression, or anxiety combined with depression in breast cancer patients accounts for 21.1%, 34.4% and 15.6%, respectively (So et al., 2010). The depressive and anxiety symptoms can persist for several years (den Oudsten et al., 2009), leading to adverse effects on the patient's quality of life, compliance to medical treatment, recurrence, survival as well as recovery from surgery during hospital stay (So et al., 2010; Ho et al., 2013; Wang et al., 2013).

To improve anxiety and depression in female patients with breast cancer, many interventions are performed in this population,

\* Corresponding author. Department of Nursing, Xi'an Jiaotong University Health Science Center, No. 76 Yanta Western Road, Xi'an, Shaanxi, 710061, PR China. Tel./fax: +86 29 8265 7017.

E-mail addresses: [dfyq100@163.com](mailto:dfyq100@163.com) (K.N. Zhou), [roselee@mail.xjtu.edu.cn](mailto:roselee@mail.xjtu.edu.cn) (X.M. Li), [lijin@mail.xjtu.edu.cn](mailto:lijin@mail.xjtu.edu.cn) (J. Li), [liu.miao99@yahoo.com.cn](mailto:liu.miao99@yahoo.com.cn) (M. Liu), [tjdshn@mail.xjtu.edu.cn](mailto:tjdshn@mail.xjtu.edu.cn) (S.N. Dang), [duolao.wang@lshtm.ac.uk](mailto:duolao.wang@lshtm.ac.uk) (D.L. Wang), [ruby3255@yahoo.com.cn](mailto:ruby3255@yahoo.com.cn) (X. Xin).

such as music therapy (Li et al., 2012; Lin et al., 2011; Zhou et al., 2011; Bulfone et al., 2009; Kenyon, 2007), relaxation training (Kovačić et al., 2013; Kovačić and Kovačić, 2011; Kashani et al., 2012; Yoo et al., 2005), exercise (Ergun et al., 2013; Mehnert et al., 2011; Eyigor et al., 2010; Segar et al., 1998), cognitive-behavioral nursing intervention (Yoo et al., 2009), supportive intervention (Bjørnekleit et al., 2012; Liao et al., 2010), laughter therapy (Cho and Oh, 2011), and others (e.g., melatonin, acupuncture, or meditation) (Hansen et al., 2014; Genc and Tan, 2014; Kim et al., 2013). These interventions are used as one-pronged strategy and varied considerably in terms of methodology, sample size and settings; the two or more interventions with similar effects are rarely used simultaneously in the same sample of female breast cancer patients.

Of the above mentioned interventions, music therapy and relaxation training have effects of improving anxiety and depression via mental relaxation and physical relaxation, respectively. Music therapy refers to the clinical and evidence-based use of music interventions to accomplish mental relaxation (de Niet et al., 2009). According to Chlan (2009), music can improve negative psychological states by occupying attention channels in the brain with meaningful, distractive and soothing auditory stimuli. Relaxation training is the intervention improving muscle relaxation of the whole body systematically and progressively (i.e., physical relaxation), which consequently reduces the level of depression and anxiety (Yoo et al., 2005). However, few randomized controlled trials consider the comprehensive effects of music therapy and progressive muscle relaxation training on anxiety, depression and rehabilitation in female patients with breast cancer after radical mastectomy.

The purpose of the study was to examine the effects of music therapy and progressive muscle relaxation training on depression, anxiety and length of hospital stay (LHS) immediately following radical mastectomy in female patients with breast cancer. Findings of the study will be benefit to provide evidence for expanding the comprehensive use of music therapy and progressive muscle relaxation training to improve mental health and rehabilitation in female breast cancer patient population.

## Methods

### Design

A randomized controlled trial design was used in the study.

### Setting

The trial was conducted in the breast surgical department of oncology center of the general hospital affiliated to Xi'an Jiaotong University, China. The protocol was reviewed and approved by the Human Research Ethics Committee of Xi'an Jiaotong University.

### Participants

Participants were in-patients with breast cancer. Based on the change in depression and anxiety scores (Wan et al., 2009; Bai and Li, 2012), 140 patients were needed to detect the difference between the two groups (70 in each group) with a power of 80% at the 5% level of statistical significance. To allow for 20% drop out, the sample size was increased to 170 patients. The patients were randomly allocated to two groups using 170 random numbers produced by computer software, with 85 in each group. Inclusion criteria were aged 25 to 65, female gender, diagnosed with breast cancer, and arranged to have radical mastectomy. If the patients had voice sensitive epilepsy, not preferred to music listening, or refused to give written informed consent, they were excluded.

## Procedures

### The intervention group

Based on routine nursing care, the intervention group patients received music therapy and progressive muscle relaxation training.

Music therapy (music listening) was performed within 48 h after radical mastectomy and delivered by the researchers using MP3 players. The researchers were trained by a music therapist, including music selection, volume controlling, time arrangement of music listening and other matters of music therapy delivery. Two hundred and thirty songs were selected, including Chinese relaxation music, classical folk music, religious music and the music recommended by American Association of Music Therapy (AAMT). The patients selected their preferred music, controlled volume and listened through a headphone connected to the MP3 player. Music listening was twice a day, once in the early morning (6a.m.–8a.m.) and once in the evening (9p.m.–11p.m.), for 30 min per session until discharged from the hospital. During the time of postoperative hospital stay, the patients who did not adhere to music listening were given encouragement and assistance from the researchers. All intervention group patients received and completed music therapy as required.

Progressive muscle relaxation training is the technique including continuous and systematic stretching and relaxing of the muscles until the whole body becomes relaxed (Lee et al., 2005). In this study, the patients were instructed how to contract and relax the 16 muscle groups on the second day after the surgery. The 16 muscle groups are right hand and forearm, right biceps, left hand and forearm, left biceps, forearm, upper section of cheeks and nose, lower section of cheeks and nose, neck and throat, chest, shoulders and upper part of back, abdominal region and stomach, right thigh, right calf, right foot, left thigh, left calf and left foot. Similar to music therapy, progressive muscle relaxation training was twice a day, once in the early morning (6a.m.–8a.m.) and once in the evening (9p.m.–11p.m.), for 30 min per session until discharged from the hospital. Therefore, the patients were encouraged to do muscle relaxation and music listening simultaneously. For those patients who felt pain while doing muscle relaxation in some muscle groups, they were instructed to focus on contracting and relaxing other muscle groups or to listen to the relaxation music, in order to alleviate pain. Progressive muscle relaxation training was conducted by the researchers in an orderly way and step by step according to the patients' condition until the patients did the training freely and easily without uncomfortable feelings. All intervention group patients attended and completed the training.

To avoid confliction of the routine nursing care delivery, the researchers performed music therapy and progressive muscle relaxation training during 1p.m.–3p.m. for the first time, in that this time period was visiting time of the hospital and the researchers had enough time to instruct the patients in music listening and progressive muscle relaxation training step by step. The following instructions and supervisions of the two interventions were performed twice a day, once in the early morning (7a.m.–8a.m.) and once in the evening (8p.m.–9p.m.). To avoid contamination of the two groups, the researchers arranged the intervention and control group patients in different inpatient areas of the breast surgical department, i.e., the intervention group patients stayed in the area A, while the control group patients stayed in the area B. These areas were not close proximity.

### The control group

The control group patients received routine nursing care, including vital signs observation, surgery district nursing, drainage tube nursing, function exercise of the surgical side and post-operative complication observation. They were not blinded

Download English Version:

<https://daneshyari.com/en/article/5868521>

Download Persian Version:

<https://daneshyari.com/article/5868521>

[Daneshyari.com](https://daneshyari.com)