

## Original Article

# Effects of Acupuncture, Tuina, Tai Chi, Qigong, and Traditional Chinese Medicine Five-Element Music Therapy on Symptom Management and Quality of Life for Cancer Patients: A Meta-Analysis

Wei-Wei Tao, MS, Hua Jiang, MS, Xiao-Mei Tao, PhD, Ping Jiang, MS, Li-Yan Sha, MS, and Xian-Ce Sun, MD  
*College of Nursing (W.-W.T., L.-Y.S.); Graduate School (P.J.), and College of Public Health (X.-C.S.), Dalian Medical University, Dalian; School of Nursing (H.J.), Peking University, Beijing; and Beijing Shijitan Hospital (X.-M.T.), Beijing, People's Republic of China*

## Abstract

**Context.** Most cancer patients suffer from both the disease itself and symptoms induced by conventional treatment. Available literature on the clinical effects on cancer patients of acupuncture, Tuina, Tai Chi, Qigong, and Traditional Chinese Medicine Five-Element Music Therapy (TCM-FEMT) reports controversial results.

**Objectives.** The primary objective of this meta-analysis was to evaluate the effect of acupuncture, Tuina, Tai Chi, Qigong, and TCM-FEMT on various symptoms and quality of life (QOL) in patients with cancer; risk of bias for the selected trials also was assessed.

**Methods.** Studies were identified by searching electronic databases (MEDLINE via both PubMed and Ovid, Cochrane Central, China National Knowledge Infrastructure, Chinese Scientific Journal Database, China Biology Medicine, and Wanfang Database). All randomized controlled trials (RCTs) using acupuncture, Tuina, Tai Chi, Qigong, or TCM-FEMT published before October 2, 2014, were selected, regardless of whether the article was published in Chinese or English.

**Results.** We identified 67 RCTs (5465 patients) that met our inclusion criteria to perform this meta-analysis. Analysis results showed that a significant combined effect was observed for QOL change in patients with terminal cancer in favor of acupuncture and Tuina (Cohen's  $d$ : 0.21–4.55,  $P < 0.05$ ), whereas Tai Chi and Qigong had no effect on QOL of breast cancer survivors ( $P > 0.05$ ). The meta-analysis also demonstrated that acupuncture produced small-to-large effects on adverse symptoms including pain, fatigue, sleep disturbance, and some gastrointestinal discomfort; however, no significant effect was found on the frequency of hot flashes (Cohen's  $d = -0.02$ ; 95% CI =  $-1.49$  to  $1.45$ ;  $P = 0.97$ ;  $I^2 = 36\%$ ) and mood distress ( $P > 0.05$ ). Tuina relieved gastrointestinal discomfort. TCM-FEMT lowered depression level. Tai Chi improved vital capacity of breast cancer patients. High risk of bias was present in 74.63% of the selected RCTs. Major sources of risk of bias were lack of blinding, allocation concealment, and incomplete outcome data.

**Conclusion.** Taken together, although there are some clear limitations regarding the body of research reviewed in this study, a tentative conclusion can be reached that acupuncture, Tuina, Tai Chi, Qigong, or TCM-FEMT represent beneficial adjunctive therapies. Future study reporting in this field should be improved regarding both method and content of interventions and research methods. *J Pain Symptom Manage* 2016;51:728–747. © 2016 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.

## Key Words

*Acupuncture, massage, Tai Chi, Qigong, cancer, symptom management, meta-analysis*

W.-W. T, H. J., X.-M. T., and L.-Y. S. contributed equally to this work and should be regarded as co-first authors.  
*Address correspondence to:* Wei-Wei Tao, MS, College of Nursing, Dalian Medical University, 9 West Section, Lvshun South Road, Dalian, People's Republic of China.

E-mail: [taoweiwei2003@163.com](mailto:taoweiwei2003@163.com); or Ping Jiang, E-mail: [dywx.2009@163.com](mailto:dywx.2009@163.com)

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## Introduction

Cancer is one of the most common causes of death worldwide. It accounted for 7.6 million deaths (around 13% of all deaths) in 2008, and deaths from cancer internationally are projected to rise to more than 11 million in 2030,<sup>1</sup> according to the World Health Organization (WHO). Conventional treatment for cancer, such as surgery, chemotherapy, radiotherapy, and endocrine therapy, aiming at curing the disease or prolonging life produces considerable beneficial medical outcomes. However, these treatments cannot eradicate the diseases and are often accompanied by adverse effects. It is acknowledged that most cancer patients suffer from both the disease itself and symptoms induced by conventional treatment, such as fatigue, anxiety, depression, nausea, and pain, and being at an increased risk of developing secondary tumors.<sup>2–4</sup> Numerous patients report feeling abandoned and isolated after cessation of active treatment,<sup>5</sup> which could exacerbate symptoms such as depression and anxiety. This may have an impact on their quality of life (QOL), which has been reported as being lower than other population groups.<sup>6</sup> Therefore, for cancer survivors, it is essential to look at ways of improving QOL and long-term health outcomes.

Nonpharmacologic interventions typically encompass a broad range of psychosocial, behavioral, and environmental strategies that may complement conventional treatment to enhance QOL for cancer patients.<sup>7</sup> Traditional Chinese nonpharmacologic interventions include a series of approaches such as acupoint stimulation, Chinese massage (referred to as “Tuina”), Tai Chi, Qigong, and Traditional Chinese Medicine Five-Element Music Therapy (TCM-FEMT). The use of these interventions for the management of cancer can be traced back to the Shang Dynasty of China 3500 years ago.<sup>8</sup> Over the centuries, various interventions such as acupuncture (involving the placement of solid, sterile, stainless steel needles into specific points on the body), moxibustion (stimulating skin thermally by the burning of moxa, also at precise locations or other specific areas),<sup>9</sup> Chinese massage (a wide range of technical manipulations conducted by a practitioner’s finger, hand, elbow, knee, or foot applied to muscle or soft tissue at specific body locations),<sup>10</sup> and Qigong have been developed and used in cancer treatment.<sup>11</sup> Qigong, a general term for a large range of traditional Chinese energy exercises and therapies, is popularly practiced by a large number of people in Chinese communities. Basically, there are two categories of Qigong: internal qigong vs. external qigong. Internal qigong or qigong exercise is self-directed and involves the use of movements, meditation, and control of breathing patterns. The

gentle movements and postures of the exercise are designed to achieve a harmonious flow of energy (qi) in the body so as to improve physical fitness and overall well-being. External qigong is usually performed by a trained practitioner using their hands to direct emitted “qi” energy onto the patient’s body in the diagnosis and treatment of various diseases.<sup>12</sup> Tai Chi includes relaxation, deep and regulated breathing techniques, and slow movements, and it is an intervention that shares many characteristics with Qigong.<sup>13</sup> Music therapy has been defined as “the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship....”<sup>14</sup> In China, researchers usually apply some traditional music based on the five elements of TCM in their studies, which is called TCM-FEMT.<sup>15</sup>

In the last decade, the use of these interventions has increased dramatically. According to the WHO, acupuncture is used in at least 78 countries.<sup>16</sup> Although multiple studies applying these interventions in cancer patients have reported positive outcomes,<sup>15,17–20</sup> others have described mixed evidence.<sup>19,21–25</sup> Differences in study design, interventions type, frequency and duration and the therapist in these interventions may produce varying results. Therefore, a systematic review with a meta-analysis of the interventions is needed to more accurately gauge efficacy for cancer patients and evaluate the quality of such studies.

Although several systematic reviews with or without meta-analysis have addressed this issue,<sup>9,12,26–33</sup> they often have covered only a small section of evidence, restricting their scope to either a specific subpopulation of patients with cancer or a specific type of intervention, or both, thus making broader conclusions difficult. Moreover, many reviews are outdated. Several reviews also have reported the utilization of TCM among cancer patients<sup>34–36</sup>; however, a large proportion of the reviews discussed the use of herbal medicine, which was not involved in the interventions. This study aims at closing this gap and producing an overall picture of contemporary research in this field while exploring the hypothesis that acupuncture, Tuina, Tai Chi, Qigong, or TCM-FEMT may contribute to the QOL of cancer patients.

## Methods

### Eligibility Criteria

Eligibility criteria are detailed following the Participants, Interventions, Controls, Outcomes, and Studies (PICOS) framework<sup>37</sup>:

**Participants.** Participants were adults aged 18 years or older who had been formally diagnosed with cancer of

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