

Effects of relaxation therapy on psychological distress and symptom status in older Chinese patients with heart failure

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Abstract

Background: Previous studies demonstrated the effects of progressive muscle relaxation training (PMRT) on improvements in the health outcomes of cardiac patients. This study examined the effects of PMRT on the psychological status and symptoms of older Chinese patients with heart failure. **Methods:** In a longitudinal, randomized, and controlled study, 59 patients were allocated to receive a PMRT program and 62 were provided with the attention placebo. The PMRT program included two PMRT sessions, one revision workshop, twice-daily PMRT home practices, and a biweekly telephone follow-up call. The attention placebo included a regular telephone call at a schedule similar to

that made by the interventionist of the PMRT program with the intervention group. Main outcome measures, including psychological distress, dyspnea, and fatigue, were taken at baseline, the 8th week, and the 14th week. **Results:** A medium effect on psychological distress in favor of the PMRT program was detected. Patients practicing PMRT however only demonstrated a non-significant trend of greater improvement in symptom status. **Conclusion:** Progressive muscle relaxation training seems to be useful as an adjunctive nonpharmacologic treatment modality in the management of heart failure.

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Keywords: Heart failure; Relaxation therapy; Psychological distress; Symptom control; Chinese elderly people

Introduction

Heart failure is an important public health problem worldwide. Its incidence and prevalence remain to be high in the Western population [1], and there is evidence of its sharp increase in the Asian region [2]. As a clinical syndrome characterized by compromised myocardial pumping, heart failure typically manifests as the end stage of various cardiac diseases among older people [3]. The fatal and progressively deteriorating nature of heart failure and its debilitating symptoms, such as dyspnea and fatigue, lead to poor psychosocial adjustment among older people [4]. Previous studies have identified high levels of psychological distress,

which presented as anxiety and depressive moods [5,6]. Psychological distress has multiple deleterious effects on the prognosis of heart failure. It aggravates the psychological contributing factors for dyspnea and fatigue [7], intensifies the hallmark physiologic abnormalities of sympathetic over-activation in heart failure [8], and hinders effective self-care disease management [9]. Convincing evidence have indicated that psychological distress independently predicted a twofold increase and a threefold increase in hospital readmissions [10] and mortality [11], respectively. However, treating psychological distress has been seldom regarded to be of high clinical priority in managing heart failure.

Relaxation therapy is a well-established behavioral therapy for alleviating psychological distress in patients with chronic illnesses. The science of the heart–mind interaction highlights its merits of use among cardiac patients. In addition to its psychological benefits, it also curtails sympathetic activation and reduces myocardial workload [12]. A review study indicated that the nonphysical approach of

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relaxation was more effective in bringing about a psychologically calming effect, whereas the physical approach of relaxation, which uses muscular activity to relieve body tension, had greater beneficial effects on physiologic outcomes [13]. Such physiologic effects indeed converge with the primary goal of heart failure treatment in blocking the manifestations of chronic sympathetic activation [8].

Mounting evidence have consistently indicated that relaxation therapy is effective in alleviating anxiety and depressive moods [14–17]; reducing sympathetic-related manifestations on cardiovascular variables such as blood pressure [14], heart rate [15], and heart rate variability [18]; and lowering the frequency of angina attack and supraventricular tachycardia [19,20] in patients with hypertension and coronary artery disease. A review of two decades of relaxation studies ($n=27$) in patients with ischemic heart disease indeed generated three key conclusions [21]: First, relaxation therapy is effective in reducing anxiety, heart rate, angina, vocational impairment, and mortality. Second, teaching full traditional relaxation therapy (Grade 2), which takes the form of either intensive training for multimodal relaxation therapy or teaching unimodal relaxation therapy plus an extended self-practice, is more effective and feasible than the abbreviated relaxation training (Grade 1) or combined relaxation and coping skills training (Grade 3). Third, future relaxation studies need to combat the common methodological flaws of the existing work, including the lack of randomization, underreporting of study power, and not confirming patients' skill mastery on relaxation. Evidence on the effects of relaxation therapy in heart failure patients is less substantial. In the 1990s, two small-scale studies that incorporated progressive muscle relaxation training (PMRT) as a component of either exercise-based psychoeducational intervention ($n=12$) [22] or biofeedback ($n=40$) [23] identified beneficial intervention effects on depressed mood [22], exercise intolerance [22], and excessive sympathetic-related physiologic arousal [23]. However, the use of multimodal intervention in these studies added difficulty to concluding the effects of relaxation therapy. More recent studies evaluated the individual effects of relaxation therapy on the physical and psychologic outcomes of heart failure patients. A one-group pretest–posttest pilot study found that guided imagery significantly improved fatigue and physical well-being in 8 patients with severe heart failure [24] but did not improve peak oxygen uptake, exercise tolerance, and dyspnea. Another randomized study also reported on the positive effect of a less common nonphysical approach of relaxation—freeze-frame technique—on the psychologic distress, depression, and functional capacity of 29 heart failure patients; however, it did not note any significant intervention effect on autonomic tone [25]. Findings of these studies conformed to the results of a review article [13] that concluded on the greater beneficial effect of the nonphysical approach of relaxation on psychologic rather than sympathetic-related physiologic outcomes. Nevertheless, the small samples of these studies limit the generalizability of their findings.

A larger-scale relaxation study randomized 83 heart failure patients to receive relaxation training, education intervention, or usual care [26]. Relaxation therapy only improved the emotional status of the patients, however, had no effect on exercise capacity, fatigue, and dyspnea. Although this study used the more effective form of Grade 2 multimodal relaxation therapy [21], the heart failure patients who were older (mean=69.8 years; S.D.=8.9) might have more difficulty with mastering and practicing the multiple relaxation techniques at one time. The alternate format of Grade 2 relaxation therapy, which involves teaching a unimodal relaxation technique plus an extended self-practice, may more effectively fit the learning ability of this group of patients.

Despite the growing number of relaxation studies on heart failure, all of the above studies were done with a Western population. Some arguments claiming the ineffectiveness and nonapplicability of Western psychotherapy to the Chinese exist. The higher likelihood of the Chinese to present emotions as physical symptoms [27], inhibit outward expression of negative emotions [28], and refuse help for their psychologic problems [29] might compromise their perceived effectiveness and acceptance of psychotherapy. However, these arguments are not supported by studies that have demonstrated the benefits of using relaxation therapy in Chinese patients with noncardiac illnesses [30–32].

To fill the gaps in the relaxation studies conducted on heart failure patients, our aim was to examine the effects of a physical approach of relaxation therapy, using a unimodal relaxation technique plus an extended self-practice, on the health outcomes of Chinese older patients with heart failure. Our objectives included examining the effects of relaxation therapy on (1) psychologic distress and (2) symptom status, particularly dyspnea and fatigue, among this group of patients.

Methods

Study design and participants

This was a longitudinal, randomized, and controlled study. Patients consecutively admitted with an index diagnosis of heart failure were recruited from the medical unit of a university-affiliated hospital. To be included in the study, the patients had to be aged 60 years or older, be able to communicate, have intact cognitive function as indicated by an Abbreviated Mental Test score of 6/10 or higher [33], and be discharged home. Exclusion criteria were the presence of physical limitations for learning PMRT (e.g., bedbound) or a preexisting psychiatric diagnosis, current use of psychotic medications, prior training or current use of relaxation therapy, and prescheduled cardiac surgery within 6 months of hospital discharge. Based on the medium-size effect of PMRT on the psychologic outcomes of patients with a cardiac disease or any other chronic illness [34],

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