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Original Article

Case-control study on regular Ba Duan Jin practice for patients with chronic neck pain



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ARTICLE INFO

Article history:

Received 24 May 2014

Received in revised form

23 October 2014

Accepted 24 October 2014

Available online 4 November 2014

Keywords:

Ba Duan Jin

Community health

Complimentary medicine

Neck pain

Qigong

ABSTRACT

Purpose: To observe the long-term effects of regular Ba Duan Jin exercises for patients with chronic neck pain.

Methods: Participants with chronic neck pain were instructed to perform ≥ 30 min/d of Ba Duan Jin exercises ($n = 36$) or assigned to a control group ($n = 36$) for six months. Data from a visual analogue scale, Northwick Park Neck Pain Questionnaire, and the 36-item Short-form Health Survey (SF-36) were collected before, and three and six months after intervention began.

Results: Participants undergoing Ba Duan Jin exercises achieved significantly greater improvement than the controls in visual analogue scale, Northwick Park Neck Pain Questionnaire and SF-36 health transition scores (all $p < 0.05$). However, no significant differences were observed in SF-36 physical or mental component summaries.

Conclusion: Regular Ba Duan Jin practice reduces suffering and pain, and increases health satisfaction in individuals with chronic neck pain.

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1. Introduction

Neck pain is a common problem that can affect two-thirds of the population at some point in their lifetime, with a prevalence of 14–17% each year [1–4]. Those particularly affected include office workers, with a prevalence of 46.7% [5], and women, who are more vulnerable to and less likely to recover from neck pain [6]. Neck pain can be a drain on health care resources and cause large social and economic burdens [7–9].

Ba Duan Jin (Chinese Ba Duan Jin qigong) is a long-time component of Chinese medicine that is still practiced by many Chinese people [10]. In recent years, a number of studies have demonstrated the effectiveness of Ba Duan Jin for relieving pain from cervical spondylosis and scapulohumeral periarthritis [11–14], as well as for improving participant quality of life. Nevertheless, the evidence concerning the effects of Ba Duan Jin on participants with neck pain is still scarce. Therefore, the aim of this study was to evaluate the effectiveness of Ba Duan Jin for relieving chronic neck pain in the elderly (45–75 yr of age).

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Peer review under responsibility of Chinese Nursing Association
<http://dx.doi.org/10.1016/j.ijnss.2014.10.006>

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2. Material and methods

2.1. Procedures

A case-controlled study was conducted between May and October 2012 in two different communities in Beijing. Participants were recruited through informational material (flyers, handouts) and cell billboards of the hospital, grassroots clinics and communities. In addition, we broadcast Ba Duan Jin background music in communities from 8:00 AM to 10:00 AM each day.

Participants were initially prescreened in face-to-face interviews according to the primary inclusion and exclusion criteria, and eligible persons were informed about the study. Participants who were interested in participating were invited into the grassroots clinic for an examination. Additional verbal and written information was provided, such as study design, exercise procedure, and voluntary participation.

Based on the assessment, patients who were willing to regularly perform the exercises for at least six months were placed in the Ba Duan Jin group, and those judged to be unwilling were placed in the control group. All the participants received weekly telephone follow-up interviews, inquiring about neck pain symptoms and other interventions, such as acupuncture, massage, physiotherapy, intake of oral analgesics, application of drugs for external use, and participation in exercise therapy, e.g. tai chi, yoga or swimming. Data were obtained from questionnaires completed at baseline, and at three months and six months during the intervention (Fig. 1).

2.2. Participants

2.2.1. Inclusion criteria

Men and women 45–75 years of age with long-term (≥ 3 mo) neck pain [visual analogue scale (VAS) ≥ 40 mm] were included. All participants voluntarily joined the study and provided informed consent.

2.2.2. Exclusion criteria

Participants were excluded from the study for: cervical pain due to an accident or related to malignancy; inflammatory joint disorders; previous spine surgery; congenital spine deformity; alcohol or substance abuse; other severe physiologic or physical diseases; participation in exercise therapy (e.g. tai chi, yoga or swimming) during the preceding six

months; plan to begin physiotherapy that could alter neck pain; participation in another study in preceding six months.

2.3. Interventions

2.3.1. Control group

Health records for each participant were established. During the six-month intervention period, the clinics also provided participants with correct behaviour guidance, such as to avoid keeping the same posture for a long time, shift their position each hour when reading or using computer, choose an appropriate pillow, and instruction on self care of neck pain.

Throughout the intervention period, participants were followed-up by weekly telephone interviews (30 min each). These interviews were conducted by four female students in their third year of undergraduate study in the School of Nursing, Beijing University of Chinese Medicine, and included asking the participants about the presence/absence of new symptoms, aggravation/alleviation of neck pain, and participation in other treatments, such as acupuncture, massage, physiotherapy, intake of oral analgesics, application of drugs for external use, and exercise therapy. Participants were then provided with the contact information of the study sponsor, whom they were told to consult if they had any questions about neck pain or the study.

2.3.2. Ba Duan Jin group

Participants in the Ba Duan Jin group received guidance and interviews identical to the control group, along with a Ba Duan Jin training program and a collective exercise period. The training program was implemented to ensure that all participants could finish the routine of Ba Duan Jin independently. Two graduate students trained and recognized by the Beijing University of Chinese Medicine and with over two years of Ba Duan Jin experience conducted two-hour daily training sessions at the clinics for the first two weeks. Each participant was also provided with a teaching video and a pamphlet, describing the efficacy of qigong, and a step-by-step description of the Ba Duan Jin routine.

Thereafter, a 30-min collective exercise was carried out daily for the remaining 5.5 mo of the intervention period. The collective exercise was conducted in the grassroots clinics by a volunteer leader (a participant who was voluntarily responsible for playing the Ba Duan Jin background music) and one of the two graduate students who conducted the training program. To encourage exercise participation, volunteer leaders recorded attendance. If participants were unable to attend the collective exercise, they were instructed to repeat Ba Duan Jin at home for approximately 30 min each day.

Ba Duan Jin was performed according to “Chinese Health Qigong Ba Duan Jin”, compiled by the Chinese Health Qigong Association of the National Sport General Administration. The Ba Duan Jin exercises begin with a ready position, followed by eight specific slow movement sequences combined with breathing techniques (Fig. 2), and conclude with a closing form.

2.4. Measurements

All participants were asked to complete questionnaires at the beginning of the study (baseline), and at three and six months

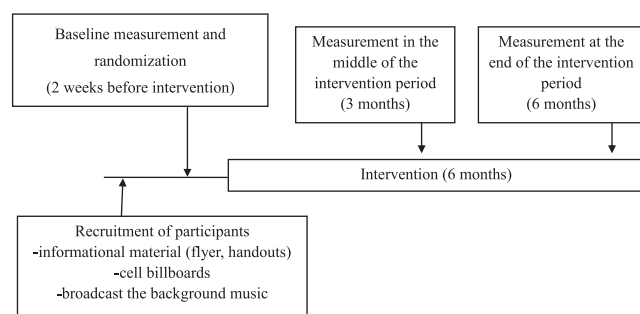


Fig. 1 – Timeline of study procedures.

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