Self-Perceived Health and Sleep Quality of Community Older Adults after Acupunch Exercises

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Objectives: *To test the long-term effects of the 12-month Healthy Beat Acupunch (HBA) exercise program on the self-perceived health and sleep quality of older adults in community care centers, and to compare the effects of two delivery methods: instructor-led HBA for the first 6 months and DVD-guided HBA for another 6 months.* **Design:** *Cluster-randomized controlled trial.* **Setting:** *Eight community care centers.* **Participants:** *In total, 232 participants were recruited from eight community care centers, and cluster-randomized to the experimental (4 centers, N = 113) and control (4 centers, N = 119) groups.* **Intervention:** *The experimental group received the instructor-led HBA program 3 times weekly for the first 6 months, followed by the DVD-guided HBA program for another 6 months.* **Measurements:** *Self-perceived health and sleep quality were assessed using the Short Form Health Survey and the Pittsburgh Sleep Quality Index, respectively, at baseline and every 3 months for 1 year.* **Results:** *The experimental group reported more favorable self-perceived physical and mental health, higher subjective sleep quality, and less daytime dysfunction than did the control group. Effect sizes of physical health and sleep quality increased from the instructor-led stage to the DVD-guided stage; the effect size of physical health showed the most significant change, increasing from 0.38 in the instructor-led stage to 0.55 in the DVD-guided stage.* **Conclusions:** *The exercise program consisting of the instructor-led class, followed by the DVD-guided class, was an effective and feasible longitudinal program for older adults in community care centers.* (Am J Geriatr Psychiatry 2018; ■■:■■–■■)

Key Words: Cluster-randomized controlled trial, community older adults, exercise, self-perceived health, sleep quality

Highlights

- The Healthy Beat Acupunch (HBA) regimen improved the self-perceived physical and mental health, *sleep quality, and daytime dysfunction of community older adults.*

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- Significant effects were observed within 6 months of the Healthy Beat Acupunch regimen and were maintained in the next 6 months.
- The *instructor-led* method followed by the DVD-guided method of delivering the exercise program was effective and feasible for implementing long-term programs for community older adults.
- The directors and staff of community care centers can recruit volunteers to be trained as HBA instructors and conduct HBA exercises weekly in the centers.

Globally, the population is aging rapidly. Between 2010 and 2050, the proportion of adults aged older than 65 years is expected to increase from 8% to 16%.[1] Numerous countries are encountering challenges in providing appropriate health and social systems for their rapidly aging populations.[2] Exercise is a key element of healthy aging, but studies on the long-term effects of exercise are limited.[3]

Although the average life expectancy has increased, the health status and sleep quality of community older adults are not optimal. A population-based study reported that more than 40% of older adults have fair to poor health.[4] Approximately 50% of community older adults reported poor sleep quality, which was significantly correlated with depressive symptoms.[5] Poor self-rated health was documented as an independent predictor of mortality in older adults[6] and it is related to mild to low levels of physical activity.[7] Therefore, exercise is essential for improving the health of community older adults.

Exercise promotes physical cardiovascular, respiratory, and musculoskeletal fitness,[8] and also promotes mental health and sleep quality. Exercise was reportedly associated with reduced depressive symptoms in community older adults.[9] Exercise can be an alternative or complementary approach to sleep problems.[10] Although exercise seems beneficial for older adults with or without specific diseases or disabilities, systematic reviews have revealed that exercise may not be as effective as it is perceived to be.[11] Although regular exercise improves sleep quality, the effects are moderated by age, sex, physical activity level, exercise type, and adherence.[12] Studies in the literature have the following drawbacks: low adherence in community-based programs,[13] fewer than 6 months of short-term interventions,[14] small sample size,[11] lack of a control group,[15] and absence of random group assignment.[16] The long-term effects of exercise in community older adults must be verified using more rigorous designs.

Longitudinal exercise programs present challenges. Most exercise programs in the literature are supervised rather than unsupervised programs,[14] but supervision requires excessive human resources[17] and creates difficulties in long-term dissemination and implementation. Few studies have focused on the effects of unsupervised[18] and peer-mentored exercise programs.[19] Feasible long-term exercise programs must be developed.

To enhance participation and attendance rates, culture-specific programs of community-based physical activity interventions are required.[20] In Chinese communities, smooth meridian flows using acupoint stimulation (e.g., acupuncture, acupressure, and acupunch) produce a favorable health and physical status of an individual's body systems.[21] Acupuncture involves inserting thin needles into the acupoints; acupressure uses fingers to put pressure on specific acupoints; and acupunch applies fists to vibrate meridians.[22] The Healthy Beat Acupunch (HBA) exercise program developed by Chen, Tsai, and Huang[23] is tailored for older adults and comprises three phases with 24 motions; its feasibility evaluation revealed that the program is simple, safe, helpful, and suitable for older adults.[23] Acupunch emphasizes vibration instead of beating. The vibrations through the hands can cuff or tap every part of the body along the meridians to transport blood and life energy (qi); the mechanism is similar to the pumping of heart.[24] Meridian cuffing can effectively promote blood circulation, thereby improving chronic illnesses and health problems caused by prolonged inactivity that is commonly seen in older adults.[25]

This study aimed to: 1) test the long-term effects of 12 months of HBA exercises on the self-perceived health and sleep quality of community older adults, and 2) compare the effects of two delivery methods: instructor-led HBA for the first 6 months and DVD-guided HBA for another 6 months.