



Letter to the Editor

Can Movement Therapy Reduce Stress and Anxiety in Geriatric Patients?

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Citation: Maoz O, Petchlorlian A (2023) Can Movement Therapy Reduce Stress and Anxiety in Geriatric Patients? Int J Geriatr Gerontol 6: 158. DOI: 10.29011/2577-0748.100058

Received Date: 08 May, 2023; **Accepted Date:** 10 May, 2023; **Published Date:** 0 May, 2023

According to WHO (World Health Organization) geriatric patients may experience stress due to various factors. These may include changes in health, financial concerns, loss of independence, and social isolation [1]. Chronic stress can lead to physical and mental health problems, such as heart disease, depression and memory decline [1,2]. It is important for geriatric patients to find ways to engage in stress-reducing activities in order to maintain their well-being.

According to the World Bank, as of 2021, approximately 12% of Thailand's population (6.5 million) was over the age of 65. The population of Thailand ages rapidly in recent years and likely continues to increase in the coming years [3].

It was found that Movement therapy that includes Qi Gong and BEATUBE method can improve responsiveness and emotional state of older patients with psychiatric problems [4].

The study, consisted of 179 observations from 76 distinct patients, took place at the Geriatric Excellence Center at King Chulalongkorn Memorial Hospital, Bangkok, Thailand. The center pledged to prepare Thai society for global aging change by promoting healthy lifestyle among older people, slowing down their degeneration, and reducing their dependency to enable them a better quality of life. The researchers focused on the stress feelings of elderly people, the question posed was: Can movement therapy reduce stress and anxiety in geriatric patients?

The patients attended a group as well as individual body-movement therapy that included Qi-gong and BEATUBE. The study lasted three months. The patients were asked to grade their stress level from 1-10 before and after each therapy session using a Subjective Units of Distress Scale (SUDs) - a self-reported scale that assesses the subjective level of distress in the patient [5]. This study used data from a study approved by the institutional Review

Board of the Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand (IRB number 825/62 and 718/62).

Since data was paired (before and after scores), a paired distance test was used. The correct analysis must be per patient, so the data was summarized for subjects who made repeat visits by their average stress levels. The data itself consisted of discrete (ordered) outcomes in the possible range of 1-10. As such, it does not follow a normal distribution. The per-patient means are not necessarily discrete, but the number of observations per patient is rather small (6 or less). Looking at the histogram and qqplot of differences (data not shown), it did not resemble a normal distribution, as such the assumptions for the paired t-test do not hold. The Wilcoxon signed rank test is the non-parametric equivalent of the paired t-test. Since the data has both 0's (no difference) and ties (same difference), which is common for discrete data, the normal approximation to the test statistic is used [6].

Most patients (42) appear to come without any stress at all. All patients who graded 1, didn't increase in stress after the treatment, and their after score is still 1. It is highly significant that those who came with a stress grade higher than 1 (34 different patients in all), reported lower stress after the session ($V = 595$, $p\text{-value} = 3.026e-07$).

In addition to the main test, a sensitivity analysis was conducted on the 1st visit of every patient ($V = 325$, $p\text{-value} = 6.563e-06$), and the last visit ($V = 253$, $p\text{-value} = 2.683e-05$). The exact sign-test on the patients means was also conducted after removing 0's ($p\text{-value} = 1.164e-10$) and a t-test, which although is less appropriate, is known to be quite robust for violation of the normal distribution assumption ($t = 5.3069$, $df = 75$, $p\text{-value} = 1.093e-06$). All came significant. Our results show that a movement therapy consist of Qi Gong and BEATUBE method, has a positive

effect on reducing stress and anxiety emotions in geriatric patients (Figure 1).



Figure 1: Per patient (mean) difference in stress level due to Beatube and Qigong sessions.

Disclosure

The Beatube method was developed by the corresponding author, Or Maoz, together with Amit Hadad, as a movement-based therapy to address and treat the older population. The method has been tested for ten years and this is the second study (being done in a hospital) that involves BEATUBE as a therapy tool. The authors received no financial support for the research, authorship, and/or publication of this article.

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