

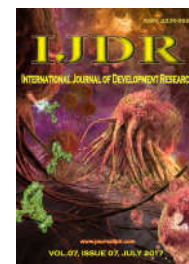


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## EFFECTIVENESS OF TAI - CHI DANCE ON SELECTED PARAMETERS AMONG HYPERTENSIVE ELDERLY IN SELECTED OLD AGE HOME

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### ABSTRACT

**Aim of the study:** To Assess the effectiveness of Tai – chi dance on selected parameters among hypertensive elderly in selected old age home.

**Background:** Aging is a process of biological and sociological experiences. Aging reflects all the changes that occur over the course of life, encompassing physiological, psychological and social changes. In India as per 2015 survey 20.8 million people older adults were living. In that 9.2 million people affected with hypertension. As older adults live longer, they may have more health problems like hypertension and diabetes mellitus. Tai – chi dance exercise has been identified as a complementary therapy. Along with medication Tai – chi dance exercise will help in control the symptoms of hypertension and cholesterol level.

**Design:** Pre experimental one group pre-test – post-test design.

**Methods:** Non - Probability sampling technique – Convenience sampling method was used. A total of 50 hypertensive elderly participated in the study. Aneroid sphygmomanometer and Blood routine was used to assess the level of blood pressure and cholesterol for data collection.

**Result:** The pre-test means score of Level of blood pressure was  $154.40 \pm 11.09$  and the post-test mean score was  $126.06 \pm 18.13$  among study group.

**Conclusion:** This study indicates that the Tai –chi dance is an effective exercise to maintaining the level of blood pressure and level of cholesterol.

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### INTRODUCTION

Aging is a process of biological and sociological experiences. And also aging refers to becoming older. Aging reflects all the changes that occur over the course of life, encompassing physiological, psychological and social changes. Aging is among the greatest known risk factors for most human diseases, according to WHO (World Health Organization) estimates that 146.2 million peoples in 2014 above 60 years. In that 120.6 million people are affected with disease and disabilities. In India as per 2015 survey 20.8 million people older adults were living. In that 9.2 million people affected with hypertension. The proportion of people aged over 60 years is growing more than 1.2 billion by the year of 2020. The physiological decline in aging refers to the physical

changes an individual experiences because of the declines in the normal functioning of the body resulting in poor mobility, vision, hearing, inability to eat and digest food properly.

As older adults live longer, they may have more health problems like hypertension and diabetes mellitus. Tai – chi dance exercise has been identified as a complementary therapy. Along with medication Tai – chi dance exercise will help in control the symptoms of hypertension and cholesterol level.

### BACKGROUND

In current life style practices , many people's having hypertension and level of cholesterol problems common

among the general population in all age groups especially in older age groups. Blood pressure level and cholesterol level that affects people’s in many ways. Even though people can get many pharmacological interventions, in real life poor control of blood pressure and cholesterol level is common. Prevalence of this has risen, which leads to long term hospitalization, increase mortality, and affects the quality of life to the people. Many older people are troubled by chronic conditions that can have a major effect on their quality of life. Helping the elderly to maintain blood pressure and cholesterol level can be challenging.

The human and economic burden associated with this condition is severe. Increased hypertension and cholesterol level could be controlled. Medication is not the only way to control the level of blood pressure and cholesterol. In this management, complementary and alternative medicine is enjoying a growing popularity worldwide. A review of medical literature have found and proved in their studies that the increased blood pressure and cholesterol by assessing the elderly blood sample and using the sphygmomanometer can be maintained the level of blood pressure level and cholesterol by the Tai chi dance. Therefore the investigator felt the needs of economic and easiest method to increase the relief of symptoms of hypertension and obesity related problems. The investigator felt this can be achieved by tai chi dance which is to be given in the duration 15-20 minutes for 4 weeks. Hence the tai-chi dance will promote the cost effective intervention and to maintain the blood pressure and cholesterol level. The investigator found that in Intensive care unit (ICU) 25% of patients and most of them have cardiac complaints like hypertension above the age of 50 years. This can be reduced by Tai – chi dance exercise along with the medications and to control the symptoms of hypertension.

**Aim of the study:** To assess the effectiveness of Tai – chi dance on selected parameters among hypertensive elderly in selected old age home, Chennai.

**MATERIALS AND METHODS**

Total 50 hypertensive elderly selected in Old age home participated in the study group. Pre experimental one group pre-test – post-test design was carried out and samples were selected with Non-Probability sampling technique – Convenience sampling method. The tool consist assessing the selected parameters through the level of blood pressure was assessed by using the aneroid sphygmomanometer and the level of cholesterol was assessed by doing lipid profile through the blood test.

**Ethical consideration:** The project has been approved by the ethics committee of the institution. Informed consent was obtained from the participants before initiating the study.

**RESULTS**

**Section 1:** The Frequency and percentage distribution of demographic variables of hypertensive elderly revealed that majority 19(38%) were in the age group of 66 – 70 years, 25(50%) were male and female respectively, 39(78%) were married, 22(44%) had high school education, 21(42%) had the hobby of watching television, 28(56%) obtained health information through newspaper 17(34%) were involved in exercise routinely.

**Section 2**

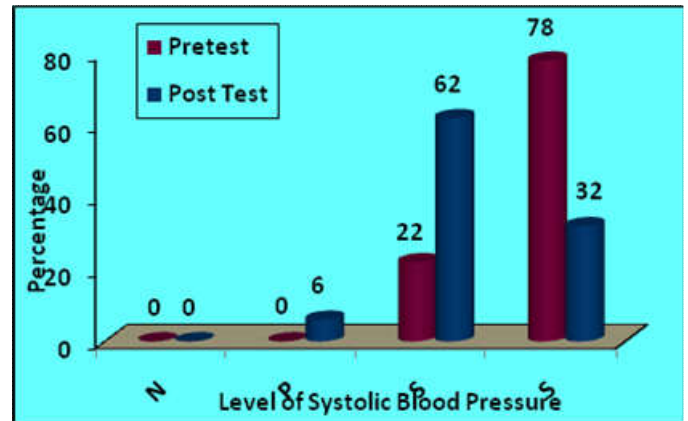


Figure 1. Percentage distribution of pre-test and post-test level of systolic blood pressure among hypertensive elderly. n=50

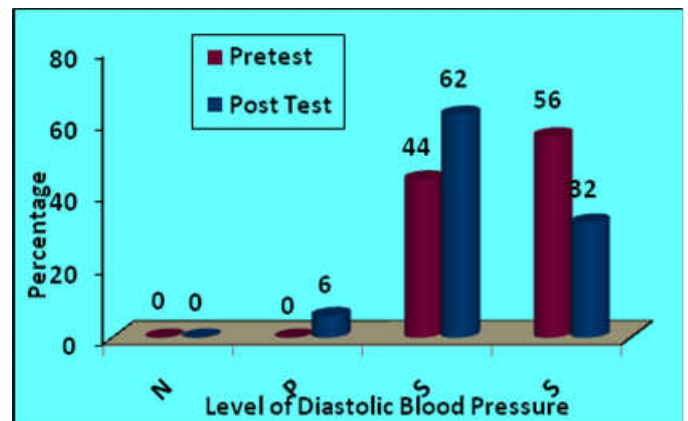


Figure 2. Percentage distribution of pre-test and post-test level of diastolic blood pressure among hypertensive elderly n = 50

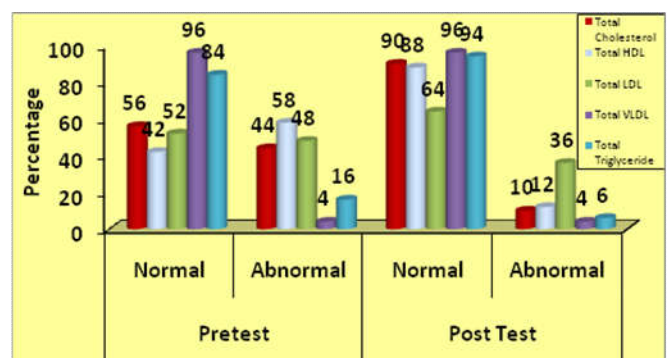


Figure 3. Frequency and percentage distribution of pre-test and post-test level of LIPID test among hypertensive elderly n = 50

**Section 3:** The result depicts that in the pre-test, the mean score of systolic BP was 154.40±11.09 and the post mean score was 126.06±18.13. The calculated paired ‘t’ value of t = 11.825 was found to be statistically significant at p<0.001 level. This clearly indicates that there significant difference (reduction) in the level of systolic BP among the hypertensive elderly in the post test. The result depicts that in the pre-test, the mean score of diastolic BP was 95.60±6.11 and the post mean score was 87.0±7.63. The calculated paired ‘t’ value of t = 7.769 was found to be statistically significant at p<0.001 level.

This clearly indicates that there significant difference (reduction) in the level of diastolic BP among the hypertensive elderly in the post test. The result also portrays that in the pre-test, the mean score of Total Cholesterol was  $189.18 \pm 44.83$  and the post mean score was  $156.86 \pm 37.74$ . The calculated paired 't' value of  $t = 5.162$  was found to be statistically significant at  $p < 0.001$  level. This clearly indicates that there significant difference (reduction) in the level of Total Cholesterol among the hypertensive elderly in the post test.

The result also shows that in the pre-test, the mean score of Total HDL was  $47.26 \pm 6.77$  and the post mean score was  $63.92 \pm 15.81$ . The calculated paired 't' value of  $t = 6.306$  was found to be statistically significant at  $p < 0.001$  level. This clearly indicates that there significant difference (increase) in the level of Total HDL among the hypertensive elderly in the post test. The result also shows that in the pre-test, the mean score of Total LDL was  $122.98 \pm 36.05$  and the post mean score was  $119.50 \pm 29.88$ . The calculated paired 't' value of  $t = 0.890$  was not found to be statistically significant.

This clearly indicates that there no significant difference in the level of Total LDL among the hypertensive elderly in the post test. The result also depicts that in the pre-test, the mean score of Total VLDL was  $21.74 \pm 9.41$  and the post mean score was  $21.74 \pm 9.41$ . Since there was no significant change in the scores 't' test cannot be computed. The result also shows that in the pre-test, the mean score of Total Triglycerides was  $109.66 \pm 49.0$  and the post mean score was  $102.38 \pm 37.15$ . The calculated paired 't' value of  $t = 2.059$  was found to be statistically significant at  $p < 0.05$  level. This clearly indicates that there no significant difference in the level of Total Triglyceride among the hypertensive elderly in the post test.

The above difference clearly indicates that the Tai – Chi Dance administered to the hypertensive elderly was found to be effective in reducing the level of blood pressure and cholesterol level among the hypertensive elderly.

**Section 4:** The result shows that the demographic variable age had shown statistically significant association with post-test level of systolic blood pressure at  $p < 0.05$  level and other demographic variables had not shown statistically significant association with post-test level of systolic blood pressure among hypertensive elderly. The result shows that none of the demographic variables had shown statistically significant association with post-test level of diastolic blood pressure among hypertensive elderly. The result shows that none of the demographic variables had shown statistically significant association with post-test level of total cholesterol among hypertensive elderly. The result shows that none of the demographic variables had shown statistically significant association with post-test level of total HDL among hypertensive elderly.

The result shows that the demographic variable health information obtained through had shown statistically significant association with post-test level of total LDL at  $p < 0.05$  level and the other demographic variables had shown statistically significant association with post-test level of total LDL among hypertensive elderly. The result shows that none of the demographic variables had shown statistically significant association with post-test level of total VLDL among hypertensive elderly. The result shows that none of the demographic variables had shown statistically significant association with post-test level of total triglyceride among hypertensive elderly.

## DISCUSSION

### *The first objective was to assess the level of blood pressure and level of cholesterol in study group*

Hypertension is the major risk factor for coronary heart disease and stroke, and frequently causes damage to the arterial blood vessels, the eyes and kidneys. Prolonged hypertension also causes enlargement of the heart and may lead to heart failure. Severe uncontrolled hypertension can be life threatening to the people. Drugs are used in the management of hypertension people. Still it would not improve quality of life of the hypertensive people. Long-time use of medications can lead to many adverse effects to the people. To solve these problems by Tai – chi dance found to be practiced in the other countries.

A study was conducted at Anandam Old age home, Kallikuppam, Ambattur, Chennai. A total of 50 samples were selected by convenient sampling technique and all the samples were selected based on inclusion criteria and exclusion criteria. After selecting the sample, samples were explained about the steps in the study and informed consent was obtained. On the first day pre-test was conducted regarding level of blood pressure was checked by aneroid sphygmomanometer and level of cholesterol was checked by lipid profile test through the blood routine in study group. After giving the Tai – chi dance for the duration of 10 – 15 minutes. The pre-test level of blood pressure of the elderly almost 39 (78%) were Stage 2 hypertension and pre-test level of cholesterol of the elderly almost 28 (56%) were abnormal cholesterol. In this first objective the level of blood pressure was assessed and it shows that higher proportions of the samples were stage 2 hypertension 39 (78%) that is few of the samples had stage 1 hypertension 11 (22%) and none of the samples had prehypertension and normal hypertension and pre-test level of cholesterol 22 (44%) were in abnormal total cholesterol. Most of the elderly were able to know the prevention of blood pressure due to their own experience. But none of them not able to know the prevention of blood pressure and cholesterol. This study was supported by Prasanna. *et.al* (2015) had assessed the effectiveness of Tai – chi dance hypertension and cholesterol patients in Saint Catherine Medical College out – patient department. 100 patients were randomly allocated into the interventional and the control group for a period of 2 months. This study revealed that patients need to know the Tai – chi dance regarding hypertension and cholesterol in order to prevent hypertension and cholesterol in early diagnosis and treatment. Hence from the above study, it was concluded that, majority of patients had do not know the prevention of hypertension and cholesterol. So they need to now the preventive measures.

### *The second objective of the study was to determine the effectiveness of Tai – chi dance on level of blood pressure and level of cholesterol among hypertensive elderly*

The increasing prevalence of hypertension is a global phenomenon. It is mainly due to hyper responsiveness to the various stimuli results in inflammation on bronchial walls and increased mucus production. Hypertension can be managed by medication even though the quality of life is poor. Now a days Non – pharmacological interventions play a major role in the controlling hypertension and cholesterol. Tai – chi dance was found by Mr. Kong Polovinch shun to reduce the chronic hypertension.

This method helps to improve the quality of life of the patients and cost effective. The steps are nasal breathing, control pause (breath holding time) and relaxation. Patient can do this exercise by standing comfortably. This method can be done once a day in morning for 20 – 25 minutes for 4 weeks. Since the researcher has done a study at Anandam old age home, Kallikuppam, Ambattur, Chennai with 50 samples. The investigator assessed the level of blood pressure by using the aneroid sphygmomanometer and assessed the level of cholesterol by using the lipid profile test in study group. Then the Tai – chi dance training was given on the study group on the next day. Repetitive trails were given to the subjects 10 – 15 minutes once a day in morning for duration of 4 weeks. The investigator assessed the post-test level of hypertension and level of cholesterol in study group, at end of the fourth week of Tai – chi dance intervention. The findings of the present study showed that Tai – chi dance was effective to control the blood pressure and slightly it reduced the cholesterol level but not in a normal level of hypertensive elderly people which was statistically significant at  $p < 0.001$  in hypertension and  $p < 0.05$  in cholesterol. Overall this study revealed that 16 (32%) had stage 2 hypertension, 31 (62%) had stage 1 hypertension and 3 (6%) had pre hypertension.

This study was supported by Quan – Hai Zhang., *et.al* (2016) who had conducted on clinical trial on the Tai – chi dance. The trail was conducted on subjects with muscle strength and health problems related to obese like increased level of cholesterol aged 60 to 65 years for 6 weeks, the experimental group given 45 minutes of exercises training 4 times a day for 6 weeks. The control group continued their usual treatment regimen. After given the Tai – chi dance was measured the level of cholesterol. The experimental group showed a significant improvement the balance score  $p > 0.005$  and level of cholesterol score  $p > 0.001$ . The control group shows no significant difference. In this study when compared the pre-test value to the post-test value showed the significant improvement in cholesterol. In pre-test value, few of the hypertensive people were in the age group of 70 – 80 years. For the first time, these groups of obese people did not understand the dance purpose and the steps and they did not ask and discuss many doubts. When the investigator taught Tai – chi dance to other age group between 60 – 70 years could understand it clearly. So the elderly disclosed many questions and doubts and discussed much about the intervention which could be followed. While teaching the steps of the Tai – chi dance, the investigator made a pause for the movement for the elderly to clarify their doubts by visually and verbally. Hence the Tai – chi dance significant slightly reduced in the level of cholesterol and hypertension. But it is not come down in a normal level.

**The third objective of the study was to associate the demographic variables and post-test level of blood pressure and level of cholesterol among hypertensive elderly**

The findings of the study showed that there was a statistically significant association between the age and the post-test level of total cholesterol among hypertensive elderly at  $p < 0.05$  level.

The total cholesterol concentration increases with the age. Tai – chi dance will decreases the total cholesterol level among the elderly adults but it is found that it is very effective among the patients at the age group of 60 – 70 years and has not shown that much effective among the patient of age group of 71 – 80 years. This study was supported by Warren M. Sperry., *et.al* (2016) who had conducted on clinical trial on the Tai – chi dance. The trail was conducted on subjects with determinations of the total cholesterol concentration of the blood serum aged 19 to 43 years. The results showed a significant improvement about 15 to 30 per cent was found. It is concluded that the serum cholesterol concentration increases with age.

## Conclusion

In general, alternative therapies are beneficial to the geriatric population, mainly in managing chronic conditions, relieving pain and improving the quality of life. Especially Tai – chi dance plays an important role in geriatric care, where it is not only encouraged good health practices but emphasize on a holistic model of care in reducing physical and psychological problems of elderly.

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