

Effect of Taichi Exercise on the Stress of Elderly with Hypertension

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Abstract

Background: One of the most prevalent chronic diseases affecting elderly people is hypertension, or high blood pressure, which is strongly linked to psychological factors like perceived stress. Stress management and hypertension prevention are both helped by aerobic exercise. In a similar vein. This study aims to examine the impact of Tai Chi on senior hypertension patients' stress levels.. **Methods:** 64 elderly with hypertension participated in this quasi-experimental trial with pre- and post-tests at two elderly care centres in south Tamilnadu. Six weeks of eight- form Tai Chi exercise were included in this study. The Perceived Stress Scale (PSS) and two questionnaires containing demographic information were utilized for data collection, and the SPSS-PC V21 software was utilized for data analysis. **Results:** The perceptions of stress were identical. It is the analysis of variance (ANOVA) ($P = 0.557$ and 0.489) indicated that there was no statistically significant difference between the mean of the perceived stress score prior to and following the intervention. **Conclusion:** The 8-structure Jujitsu practice is a protected mediation for the old and has delivered a significant contrast in the degree of felt pressure among more established ladies, consequently further examination is encouraged to decide a fitting and successful style of this activity.

Keywords: Hypertension, Stress, Tai Chi exercise, Perceived Stress Scale, Elderly

INTRODUCTION

A significant obstacle is the world's growing older population and rising life expectancy. Somewhere in the range of 2000 and 2050, the level of individuals north of 60 is expected to fourfold around the world, from roughly 11% to 22%, as per a World Wellbeing Association (2013) report. There will be 2 billion people over 60 in the same time period, up from 605 million at the moment. There are various limits and incapacities that more seasoned individuals face. One of them is hypertension, or high blood pressure (Lloyd Sherlock et al., 2014). It is the essential supporters of BP (Hapunda et al., 2015), and those who suffer from the condition experience significantly higher mean levels of stress than those who do not (Vahedian Azimi et al., 2015). It's likewise fundamental to recollect that pressure influences ladies considerably more than it does men. Ordinary oxygen consuming activity is one of the foundation techniques for overseeing and forestalling hypertension (Lan et al., 2013).

The American Culture of Maturing (Pho et al.) depicts Jujitsu as a diverse game and a reasonable activity for senior residents. Quite possibly of the best exercise in this point, as I would like to think. 2012). It is also known as Tai Chi To improve balance and shift weight from one leg to the other in Tai Chi, coordinated, rhythmic movements are used (Lan et al., 2007). According to Azimzadeh, Hosseini, and Nourozi Tabrizi (2013), there are many different ways to practice Tai Chi. Yoga Quan has been demonstrated to be a protected sort of activity that forestalls and treat cardiovascular illness without making any regrettable side impacts, as per one of Taylor-Piliae's (2014) concentrates on regarding the matter. According to Lee (2017), it is the exercise while standing or sitting (Lee). They recommended that the amount and routineness of Jujitsu training (meetings, recurrence, and term) may influence the results.

Yeh and others in an orderly survey led in 2008, the effect of Yoga on circulatory strain was analyzed. They concluded that non-pharmacologic Tai Chi practice may aid in hypertension management and blood pressure reduction. They assert that there are a variety of Tai Chi styles. Biglari and others (2016) looked at the effects of walking and cardio metabolic markers eight weeks after Tai Chi Quan exercise on elderly Iranian women.

This paper intends adults in light of the lack of research on the exercise's impact demographic and prior Tai Chi research.

METHODOLOGY

Study design and participants

The multi-stage inspecting procedure was applied. The names of the two places in south Tamilnadu were then picked aimlessly from a rundown of all the matured consideration offices that the Government assistance Association has introduced and their status to take part in the review. The experimental group's middle was chosen by flipping a coin, and the benchmark group's middle was chosen from these two habitats. The Abbreviated Mental Test (AMT) is used to evaluate older adults' cognitive impairment. It is not practicing Tai Chi or meditation are additional requirements for inclusion for older adults.

Study tool

At the two places, concentrate on members who met the prerequisites for consideration gave their educated assent in the wake of being educated regarding the objectives and movement of the examination. After ensuring that none of the elderly had any cognitive impairment, the participants completed a demographic data form that inquired. The Cohen et al.- created Apparent Pressure Scale (PSS) was utilized to quantify pressure (1983). While contrasting individuals' view of pressure with the unconventionality and wildness of life altering's situations, this instrument is a brilliant decision. On a four-point Likert scale, it has 14 items with 0 = never, 1 = almost never, 2 = sometimes, 3 = fairly frequently, and 4 = very frequently.

At a confidence level of 95% and a test strength of 80%, the sample size for each test and control group was 38. Three test group participants were not included in the intervention because they did not want to continue practising Tai Chi, two because they were weak and cold, and one because they had suffered a stroke. This was because the intervention lasted for a long time and the seniors were not familiar with it. Five elderly women in the control group stated that they were not interested in completing a post-test questionnaire, and one of them passed away. In the end, the test and control groups' 32 samples were analysed. The treatment consisted of eight 40-minute sessions of Tai Chi every other week for six weeks. The elderly were instructed in Tai Chi exercises by a researcher who was a certified Tai Chi practitioner, it is crucial to emphasise. Additionally, the exercise was carried out in a room large enough to accommodate all of the elderly women at once. The following are the specifics of the intervention:

Five minutes were allotted for a warm-up that included exercises for relaxation and balancing (taking into account the abilities of each elderly. 20-30 minutes of listening to Tai Chi music while performing one to eight Tai Chi movements in the following hand and body

positions: 1: Start with both hands raised to shoulder level; 2: Curving the arms behind; 3: Moving your arms and stepping sideways; 4: Hands that move like clouds 5 = strides in a diagonal; 6: Sitting on one foot; 7 is pushing and stepping; and 8: The closing form, with the left leg drawn toward the right leg and both hands to the side. Five minutes of deep breathing and muscle relaxation to cool down.

The control group did not receive any additional special attention beyond the standard care. The test and control groups completed the perceived stress questionnaire as soon as the intervention had ended for six weeks.

Statistical analysis

The frequency and percentages of the demographic factors were shown for each category. The PSS scores' mean, median, and standard deviation were given. To investigate the connection between demographic variables and PSS results, the Chi-square test was performed. Two-tailed tests were employed for significance testing at 5% level of significance.

RESULTS

Table 1: Demographic characteristics of study participants with association N=64

Variables	Group	Experimental Group		Control Group		Significance
		N	%	N	%	P Value
Age	60-64 years	6	18.8	5	15.8	NS
	65-69 years	14	43.8	14	43.8	
	70-74 years	5	13	8	22	
	> 75 years	9	26	7	19	
Educational level	Unlettered	8	22	6	16	NS
	Lettered	22	66	22	66	
	Secondary school	04	13	5	13	
	Academic	1	1	3	7	
Duration of hypertension	< 25 months	14	43.8	8	25	NS
	25-74 months	8	25	6	18.8	
	75-125 months	7	19	17	51	
	>125 months	5	13	6	16	
Marital status	Married	18	54	22	66	NS
	Divorced	2	4	0	0	
	Widowed	15	44	12	35	
Economic situation	Good	2	4	16	47	0.001*** Significant
	Fair	23	69	17	51	
	Poor	10	29	2	4	

Table 2: Mean \pm SD and ANOVA results of the perceived stress before and after the Intervention in both the study groups N=64

Interventions	Exp. Group	Control Group	Repeated Measures Anova	
	Mean \pm SD	Mean \pm SD	Intra-Group	Inter-Group
Before Intervention	26 \pm 8	27 \pm 11	F = 11	P = 0.5
After Intervention	23.84 \pm 6.64	25.44 \pm 9.87	F = 2.54	P = 0.115

Table 3: Mean \pm SD and paired t-test results of the perceived stress before and after intervention in both study groups N=64

INTERVENTIONS	EXP.GROUP	CONTROL GROUP
	Mean \pm SD	Mean \pm SD
Before intervention	26 \pm 8	27 \pm 11
After intervention	24 \pm 7	26 \pm 10
Paired t-test	T test value = 1.2, degree of freedom = 31	t test values = 0.2 ,degree of freedom = 31
P Value	P = 0.262	P = 0.267

RESULTS

As far as age, level, weight, weight record, span of hypertension, fundamental sickness, conjugal status, instructive achievement, monetary condition, and utilization of portability helps, the segment examination showed no tremendous contrasts between the two gatherings (Table 1).

The test and control groups' participants' felt stress scores were compared. As indicated by a free t-test, there was no genuinely huge contrast between the two gatherings at the pre-mediation stage ($P = 0.575$). For the intra-bunch impact, there was no measurably tremendous contrast between the two gatherings' mean scores ($P = 0.489$) (Table 2). Additionally, the two groups did not differ significantly in terms of perceived stress variations ($P = 0.836$) according to an independent T-test. As a general rule, the experimental group's impression of stress was tantamount to the benchmark group's when the mediation ($P = 0.262$; $P = 0.267$).

DISCUSSION

The purpose of this study was to ascertain how older hypertensive women's perceptions of stress changed after participating in Tai Chi classes. The age range of 65 to 69 represented the largest proportion of seniors. It's influential for note that their mean ages are lower than those of those matured 60 to 74. BMIs of 23 and 22 are the values between ($P = 0.579$). The range of the elderly's BMI in this study is within normal limits. However, it should be emphasized that women's mean BMI is significantly higher than men's. However, patients with hypertension have higher BMIs than those with normal blood pressure due to the connection between BMI and blood pressure.

Between the two gatherings, there was no way to see a distinction in the length of hypertension ($P = 0.353$). While 43.8 percent of women in the test group had hypertension for less than 25 months, 50% of women in the control group had it for at least 75 to 125 months. $P = 0.106$ indicated that there was no significant difference between the two groups in terms of the underlying disease, its history, or its homogeneity. 78.1% of the benchmark group and 59.4% of the experimental group had conditions that couldn't be controlled notwithstanding hypertension. As markers, participants mentioned alterations in the immune, neurological, musculoskeletal, cardiovascular, liver and endocrine, and visual systems as well as the immune system of the various ailments that afflicted seniors. Health care costs would soar as a result (Rasel & Ardalan, 2007).

There were no way to see a distinctions between the two gatherings concerning tutoring ($P=0.676$). In each group, 66% of the patients were able to read and write. The mean degrees of stress seriousness fluctuated altogether across people with various levels of tutoring. Generally speaking, it was resolved that there was no tremendous contrast in the test and control gatherings' sensations of stress when the mediation. There have been a lot of studies done on the Tai Chi exercises. While a portion of these exploration delivered ends that concurred with our own, others didn't. Lee and associates (2017) analyzed the impacts of Yoga on 68 ladies beyond 65 years old as far as their pulse and midriff boundary. The program was six weeks long and consisted of five 60-minute sessions of simplified Yang style 24-form Tai Chi each week. They arrived at the resolution that Yoga can assist seniors by bringing down their blood with compelling and abdomen perimeter. Kim et al. () conducted a different study 2016), 64 people (matured 51 to 87), both Chinese and non-Chinese, partook to investigate the psychological consideration Kendo impact.

When people are sufficiently motivated to practice Tai Chi, as was observed among Chinese elders, their findings revealed. Miller and Taylor Piliae (2014) looked at recent studies on the effects of Tai Chi on cognitive function in older people living in the community. Some of these studies found that Tai Chi exercise had no significant effect on the performance of the study population. They say that not getting the results you want from Tai Chi can be caused by a number of things, such as not having

a good way to do it correctly. Auditing the discoveries of other examination and contrasting them with our own proposes that these conflicting discoveries might be because of the patients' orientation, state of being, clinical history, Judo style, its seriousness, and term. The success of a Tai Chi exercise can be influenced by a number of factors, including the instructor's level of expertise, the duration of the exercise, and the way it is performed. Despite the fact that the majority of studies specify the duration and frequency of the intervention, the time it took any study participant to complete the exercise has not been taken into consideration, which could have a significant impact on the results. Utilizing the visual senses, envisioning, relaxing, and remembering the type and order of movements that influence outcomes are crucial in sports like Tai Chi. According to Miller & Taylor Piliae (2014), each study has utilized a different type of Tai Chi exercise because there is not a specific and tailored Tai Chi protocol for senior adults. Social contrasts affect the consequences of Kendo practice mediations. How this game is integrated into more seasoned individuals' life and their knowledge of it are essential issues (Yeh et al. 2008). Research conducted in Asian nations, particularly India, has produced more favorable findings due to the fact that this activity is not unfamiliar to senior people of Chinese heritage and does not conflict with their way of life.

The old are less disposed to begin and participate in this game in Iran since there isn't sufficient attention to it. Because they don't recognize these movements, some older people either don't pay enough attention to them or think they're unnecessary. Seniors who live in nursing homes may develop feelings of insignificance, near death, and hopelessness. The most powerless and worried bunch in care offices is hence viewed as the older (Naseh et al.). 2014). Because of these viewpoints and consistent pressure, they can act imprudently, with dismiss, or with an absence of excitement in participating in exercises. As indicated by research by Kim et al. (2016) on the advantages of Jujitsu for more seasoned people's psychological consideration, this exercise ought to be rehashed and drilled in unfamiliar societies, but it was not pragmatic to do as such at a secretly run senior consideration office. In addition, the older participants in our study failed to adequately concentrate on the exercises' movements. Even though Tai Chi is a type of supplement therapy, non-pharmacological treatments have recently caught the attention of individuals and medical professionals (Azimzadeh et al.). 2013). Carrying out this exercise can advance geriatrics' wellbeing and find an effective or clear type of this game for the older populace since it is fundamental to consider an old individual's all's requests comprehensively in old nursing.

CONCLUSION

One of the limitations of the study was the absence of a suitable outside area for Tai Chi exercises. In the research centre, there was no acceptable, secure sports area for the elderly. During the intervention, the older individuals who were unable to stand up sat on a chair and moved in accordance with their capacities, with a focus on enhancing upper extremity movement. It should be mentioned that seniors had access to a nearby chair they could use if they got tired or unbalanced while exercising. The carers who were in charge of each participant in aged care facilities were supposed to be close to the old and help them avoid imbalances. It is challenging to significantly generalise the results of this study due to the research design (randomised quasi-experimental); caution should be used when applying the study's conclusions.

Author's contribution

Prof. Kavitha Palanisamy: Conceptualization, Formal analysis, Project administration, Writing original draft, Validation, Investigation, Performed data collection, Writing-review and editing. Dr. Anuratha Matipol Dharmalingam: Methodology, Resources, Supervision and drafted the manuscript.

Institutional Ethical Committee approval

The survey project was reviewed and authorized by the institutional Ethical Committee of SNS College of Nursing, Coimbatore. All participants provided their free and informed consent.

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