

# AN EXPERIMENTAL STUDY TO FIND THE EFFECTIVENESS OF YOGA THERAPY ON HYPERTENSION AMONG GERIATRIC CLIENTS OF SELECTED OLD AGE HOMES AT UDUPI DISTRICT, KARNATAKA

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**Abstract:** *The prevalence of hypertension rises with age and the complications secondary to hypertension also accumulate with time. Therefore, hypertension poses a formidable challenge in the elderly for the treating physicians. Modern medicines, for controlling and regulating high blood pressure, fail to eradicate the ailment completely. Instead, they cause adverse side-effects to the kidneys and other parts of the body and can lead to dreadful disease like renal failure in the long run. In view of the limitations of allopathic medicines, even western physicians today are attracted to the remedies prescribed by the Indian Rishis and sages in ayurveda and Yoga-Shastra. So, Non-pharmacologic therapy should be offered not only as first line but also as an adjunct to pharmacologic agents. An experimental study, an evaluative research approach with pre-test and post-test control group design with repeated measurements was used and study was conducted in Perpetual home for the aged at Sastan and Ozonam old age home at Udupi. The sampling technique used was cluster sampling. The study showed that the mean post-test severity of hypertension scores in experimental group (5.9333) was lower than the mean pre-test severity of hypertension scores (7.2667). The P value in experimental group was 0.004 which is ( $<0.05$ ). In control group P value was 0.709 which is ( $>0.05$ ). This shows that yoga therapy was effective. From the findings of the study it can be concluded that majority of the geriatric clients had mild to moderate hypertension. Yoga therapy was effective for hypertension in the experimental group.*

**Key Words:** *effectiveness, yoga therapy, hypertension, savasana, sukhasana, pranayama, body mass index.*

## 1. INTRODUCTION:

Hypertension is potentially a preventable disease to some extent. It is a non-communicable disease and a major health problem in urban India, as in other developing countries. It is a pre-cursor to major diseases like myocardial infarction, stroke and renal failure. Hypertension is one of the major causes of cardiovascular morbidity and mortality. However, awareness, treatment and control of hypertension remain a major challenge worldwide. Treatment of high BP can reduce cardiovascular morbidity and mortality. Unfortunately, the prevalence of hypertension is increasing worldwide but awareness, treatment and control rates are very poor<sup>1</sup>. In recent years, yoga has emerged as a safe effective alternative or adjunct in management of hypertension. Numerous trials have observed the influence of yoga and other relaxation practices derived from yoga in lowering the blood pressure and their results have appeared in medical journals around the world. All have shown significant responses and today there is absolutely no doubt in scientific circles that yoga effectively reduces tension and lowers blood pressure. It is now only a matter of time before increase tension levels, coupled with greater economic hardship in the world communities, leads many more physicians to personally investigate and validate the practice of yoga both for themselves and their hypertensive clients. Old age is almost always associated with increase in blood pressure and other cardiovascular diseases. Researchers have been found that practicing simple yogasanas like sukhasana and savasana could minimize high blood pressure and related complications. There has not yet been a similar study experimented with geriatric clients and also elderly people would be beneficial if effectiveness is found. Hence the researcher was interested to determine the effectiveness of yoga in management of hypertension among geriatric clients in selected old age homes of Udupi District, Karnataka

## 2. OBJECTIVES:

- To assess the severity of hypertension among geriatric clients of selected old age homes at Udupi district, Karnataka.
- To analyze the variance in components of hypertension assessment scale by yoga therapy on repeated measurements of hypertension.
- To assess the effectiveness of yoga therapy on hypertension among geriatric clients of selected old age homes at Udupi district, Karnataka
- 4.To find the association between severity of hypertension among the geriatric clients with their selected demographic variable

### 3. MATERIALS AND METHODS:

#### Research approach

An evaluative research approach was adopted to find the effectiveness of yoga therapy on hypertension among geriatric clients of selected old age homes at Udupi District , Karnataka

#### Research design

A true experimental design with repeated measurements was adopted for the present study.

#### Setting of the study

Settings of the present study are old age homes. These old age homes are Perpetual home for the aged at Sastan which is run by the charitable trust and which is located 10 Kilo meter from Cananra College of Nursing, Koteswar and Ozonam old age home at Udupi and which is situated 30 kilo meters from Cananra College of Nursing, Koteswar. Perpetual old age home has a total geriatric clients strength of 64 and total hypertensive clients in this institution was 23. Ozonam old age home has a geriatric clients strength of 57 and total hypertensive clients in this institution was 26.

#### Population

Population for the study is elderly people (60 – 80years) who reside in the old age homes, Udupi District, Karnataka.

#### Sample and sample size

In this study sample comprised of 30 geriatric clients in the age group of 60-80 years, who had mild to moderate hypertension. 15 Geriatric hypertensive clients from total of 23 samples were randomly selected from Perpetual home for aged at Sastan as experimental group and 15 Geriatric clients were selected and matched from a total of 26 samples from Ozonam old age home in Udupi as control group.

#### Sampling technique

investigator had adopted a cluster sampling technique to select the sample.

#### Hypotheses

The hypotheses will be tested at 0.05 level of significance.

H<sub>01</sub>: There will be no variance in the components of hypertension assessment scale by yoga therapy on repeated measurements of hypertension in experimental group .

H<sub>02</sub>: There will be no significant difference between the mean pre-test and post-test hypertension scores in the experimental group.

H<sub>03</sub>: There will be no significant difference between the mean pre-test and post-test hypertension scores in the control group.

H<sub>04</sub>: There will be no significant association between severity of hypertension among geriatric clients with their selected demographic variables.

### 3. DESCRIPTION OF THE TOOL:

Tool I: Demographic pro-forma

Tool II: Hypertension assessment scale

### 4. FINDINGS AND ANALYSIS:

#### SECTION A

#### DEMOGRAPHIC CHARACTERISTICS OF THE GERIATRIC CLIENTS.

TABLE-1

DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
<b>GENDER</b>		
Male	16	53.30
Female	14	46.70
<b>Educational Qualification</b>		
Illiterate	15	50
Primary school	12	40
Secondary school	01	3.33
High school	01	3.33
Graduate	0	3.33
<b>Present source of income</b>		
Children	22	<b>73.30</b>
Relatives	06	<b>20</b>
Sponsors	00	<b>00</b>
Pension	02	<b>6.70</b>
<b>Duration of stay in old age home</b>		
< 1 year	16	53.33
1-2 years	10	33.33

3-4 years	04	13.33
>4 years	00	0
<b>Previous region of Stay</b>		
Urban	23	76.70
Rural	07	23.30

Data presented in the tables shows

Majority 53.30 % (16) of the samples were males and 47.47 % (14) were females

Majority 50 % (15) of the samples were illiterate ,40% (12) primary and 3.33 % (01) secondary , high school and graduates respectively.

Majority 73.33 % (22) of the samples dependent on children , 20% (06) relatives , 6.70 % (02) pension for their income

Majority 53.33 % (16) of the samples were staying in the old age homes less than 1 years, 33.33 % (10) since 1-2 years , 13.33 % (04) since 3-4 years.

Majority 76.30 % (23) of the samples belong to urban area and 23.30 % (07) rural area.

### SECTION B SEVERITY OF HYPERTENSION AMONG GERIATRIC CLIENTS

**TABLE-2**

Severity of Hypertension	Score	Frequency	Percentage
Mild Hypertension	0-8	04	13.3
Moderate Hypertension	9-16	26	86.7
Severe Hypertension	17-24	0	0

Data in Table 6 and figure shows that Majority ( 86.7 %) of the geriatric clients were having moderate hypertension, 13.3 % of them were having mild hypertension and none had severe hypertension.

### SECTION C REPEATED MEASURES ANOVA TO ANALYZE THE VARIANCE

**TABLE-3**

Components of Severity of Hypertension	df	Mauchly's test of Sphericity value	Greenhouse Geisser value	Inference
Pulse rate	20	0.013	0.331	NS
Systolic Blood Pressure	20	0.003	0.000	S*
Diastolic Blood Pressure	20	0.010	0.000	S*
Respiratory rate	20	0.001	0.002	S*
Body Mass Index	20	0.000	0.542	NS
Severity of Hypertension	20	0.001	0.001	S*

The data presented in table 7 shows the Mauchly's test is significant ( $P < 0.05$ ), so assumption of sphericity is not met, so P value in Greenhouse- Geisser was considered and it is found to be less than 0.05 for systolic blood pressure, diastolic blood pressure, respiration and severity of hypertension. This indicates a significant variance. Hence variance was observed on the components of hypertension assessment scale on different observations except in pulse rate and body mass index. So null hypothesis was rejected and research hypothesis was accepted except in pulse rate and severity of hypertension.

### SECTION D EFFECTIVENESS OF YOGA THERAPY ON HYPERTENSION

**TABLE-4**

Groups	Test	Mean Score	SD	Mean difference	T value	df	P Value
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<b>Experimental group</b>	Pretest	7.2667	0.88372				
	Posttest	5.9333	1.57963	1.3334	3.452	14	0.004
<b>Control group</b>	Pretest	7.5333	0.74322				
	Posttest	7.4000	0.98561	0.1333	0.381	14	0.709

Data in Table 8 and figure 8 shows that the mean post-test severity of hypertension scores in experimental group (5.9333) was lower than the mean pre-test severity of hypertension scores (7.2667). The P value in experimental group was 0.004 which is ( $<0.05$ ). Hence the null hypothesis  $H_0$  was rejected and the research hypothesis was accepted at 0.05 level of significance, stating that there is significant effect of yoga therapy on severity of hypertension among geriatric clients. In control group P value is 0.709 which is greater than 0.05 ( $>0.05$ ). Hence the null hypothesis ( $H_0$ ) is accepted and the research hypothesis is rejected at 0.05 level of significance, stating that there is no significant difference in the severity of hypertension among elderly without yoga therapy. This shows that yoga therapy is effective in reducing severity of hypertension.

## DISCUSSION

In the study Majority ( 86.7 %) of hypertensive clients were having Moderate hypertension, 13.3 % of them were having mild hypertension and none had severe hypertension. These findings are supported by a study which was conducted in China and the study revealed that 34% of them had Mild hypertension , 48% of them had moderate hypertension and 16% of them had severe hypertension<sup>22</sup>. Data in Table 8 and figure 8 shows that the mean post-test severity of hypertension scores in experimental group (5.9333) was lower than the mean pre-test severity of hypertension scores (7.2667). The P value in experimental group was 0.004 which is ( $<0.05$ ). Hence the null hypothesis  $H_0$  was rejected and the research hypothesis was accepted at 0.05 level of significance, stating that there is significant effect of yoga therapy on severity of hypertension among geriatric clients. In control group P value is 0.709 which is greater than 0.05 ( $>0.05$ ). Hence the null hypothesis ( $H_0$ ) is accepted and the research hypothesis is rejected at 0.05 level of significance, stating that there is no significant difference in the severity of hypertension among geriatric clients without yoga therapy. This shows that yoga therapy is effective in reducing severity of hypertension.

These findings found to be contrast with the study conducted in Thailand to determine the effectiveness of yoga on hypertensive clients. The experimental group practiced yoga for 3 times a week for 8 consecutive weeks and the study demonstrated that there was significant reduction of mean values of blood pressure.

## LIMITATION OF THE STUDY

- The small sample size in regard to gender in both the experimental and control group was a limitation to the study.
- Samples were selected from only two Institutions. So generalization is made from the sample studied here.
- Samples were selected from the geriatric clients and therefore generalizations could be made using these samples.
- Observation could not be done at the same time since the samples were selected from two different institutions.
- The study was confined to 30 samples, which resulted in reduced power of statistical analysis.
- No supporting findings related to their association of severity of Hypertension among geriatric clients to their selected demographic variables.

## RECOMMENDATIONS

Based on the findings of the present study, recommendations offered for future research are,

- A similar study can be conducted for a longer duration.
- □The study may be replicated using large sample.
- A study can be conducted using other alternative methods or techniques like breathing techniques Pranayama, Vajrasana, Virasana, Uttanasana, Janu Sirsasana, Setu Bandha Sarvangasana, Adho Mukha Svanasana, and Baddha Konasana for reducing severity of hypertension.
- A comparative study can be conducted to assess the severity
- A similar study can be conducted in community settings.

## CONCLUSION

Blood pressure refers to the amount of pressure in the arteries, that changes with each pump of the heart. Hypertension occurs when the pressure in the system gets high enough to start causing problems in the body. Conditions that cause the blood pressure to rise are usually related to the blood vessels being either constricted or overfilled; in both cases, it takes more force to pump the blood through the vessels. A raised diastolic pressure is

considered more serious than raised systolic pressure as it has a serious long term effect. Nursing personnel as a member of health care team have an important role in improving general health, well being, and quality of life of hypertensive clients by various preventive measures. The practice of yoga and the lifestyle changes inherent in the yoga philosophy work together to calm the heart and mind and brings the circulatory system back into balance, and helps to avoid heart disease. Asanas calm the mind and balance the autonomous nervous system, the center that controls stress. The sympathetic and parasympathetic nervous system which are involved in stress reaction become stabilized in the practice of asana resulting in the regulation of blood pressure.

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