International Journal of Health Sciences and Research
www.ijhsr.org ISSN: 2249-9571

Original Research Article

A Study to Assess the Impact of Guided Imagery Therapy on Blood Pressure among Hypertensive Geriatric Group Residing in Selected Old Age Home of Pune City

Rekha Vishnu Mane[1], Shital Waghmare[2]

MSc (N) Student[1], Asst. Professor[2],
Symbiosis College of Nursing, Pune, India.

Corresponding Author: Rekha Vishnu Mane

Received: 25/05/2016 *Revised: 10/06/2016* *Accepted: 17/06/2016*

ABSTRACT

Background: High blood pressure is a common and dangerous condition. Having high blood pressure means the pressure of the blood in your blood vessels is higher. Many antihypertensive medications and lifestyle changes have proven to reduce blood pressure. Over the past few decades, numerous additional modalities have been evaluated in regard to their potential blood pressure-lowering abilities. However, this non-dietary, non-drug treatments, collectively called alternative approaches has generally undergone less and less rigorous trials.

Methods and materials: The study was conducted on hypertensive geriatric group, at old-age home in India (Pune city) with equal distribution of both genders by taking 30 each sample in both experimental and control groups using non-probability convenient sampling technique. Blood pressure of both experimental and control groups were measured before and after the intervention. Data were collected, tabulated and analyzed in terms of the objectives of the study using descriptive and inferential statistics.

Results: Majority of respondents in experimental and control group belongs to the age group of 71-75, which accounts for about 46.67 and 43.33% respectively. In pre-test findings, maximum percentage of the respondents in experimental (83.33%) and control (56.67%) were having stage-I hypertension.

On the other hand, in post-test findings, 76.33% of subjects in the experimental group had normal blood pressure, 6.67% had stage-I hypertension and in the control group, 10% of them had pre hypertension, 70% of them had stage - I hypertension and 20% of them had stage - II hypertension. Considering the impact of guided imagery therapy on blood pressure the mean scores of experimental and control group is 50.53 and 60.93, the difference in mean scores is 10.4, thus it indicates that guided imagery therapy reduces blood pressure in hypertensive geriatric clients.

Conclusion: The study concluded that guided imagery therapy reduces blood pressure in hypertensive geriatric group.

Key words: impact, guided imagery therapy, hypertension, blood pressure, geriatrics, old age home

INTRODUCTION

Psychotherapy includes interactive processes between a person or group and a qualified mental health professional - psychiatrist, psychologist, clinical social worker, licensed counsellor, or other trained practitioner. Its purpose is the exploration of thoughts, feelings and behaviour for the purpose of problem solving or achieving higher levels of functioning. [1] High blood pressure is a common and dangerous condition. Having high blood pressure

means the pressure of the blood in your blood vessels is higher. But you can take steps to control your blood pressure and lower your risk of heart disease and stroke. [2] Hypertension is one of the most common disorders, affecting ≈26.4% of the adult population worldwide. It ranks as the leading chronic risk factor for mortality, accounting for 13.5% of all deaths. 1,2 Moreover, its prevalence is projected to grow to affect >1.5 billion people by 2025.1,2 Half of all strokes and ischemic heart disease events are attributable to high blood pressure (BP). [3,4] Given the monotonic relationship between cardiovascular events and BP even down to optimal levels (115/75 mm Hg), the global hypertension-related public health burden is enormous. [4] The purpose of this paper is to describe the effectiveness of Guided Imagery Therapy among hypertensive Geriatric Group residing in an old age home and to find an association between Guided Imagery Therapy on Hypertensive Geriatric Group with selected demographic variables.

Need for the study: The connection between the mind and physical health has been well documented and extensively studied. Positive mental imagery can promote relaxation and reduce stress, improve mood, control high blood pressure, alleviate pain, boost the immune system, and lower cholesterol and blood sugar levels. Through guided imagery techniques, patients can learn to control functions normally controlled by the autonomic nervous system, such as heart rate, blood pressure, respiratory rate, and body temperature. One of the biggest benefits of using guided imagery as a therapeutic tool is its availability. Imagery can be used virtually anywhere, anytime. It is also an equal opportunity therapy. Although some initial training in the technique may be required, guided imagery is accessible to virtually everyone regardless of economic status, education, or geographical location. Guided imagery also gives individuals a sense of empowerment, or control. The technique is induced by a therapist who guides the patient. The resulting mental imagery used is solely a product of the individual's imagination. [5] Ageing is an inevitable developmental phenomenon bringing along a number of changes in the physical, hormonal and the social condition. Ayurveda termed an old age as "Vardhakya" which begins from the age sixty. In old age, the need for economic, health and emotional wellbeing assume special significance because of gradual reduction in abilities.

Isolated systolic hypertension, an elevation in systolic but not diastolic pressure, is the most prevalent type of hypertension in those aged 50 or over. The increase in blood pressure with age is mostly associated with structural changes in the arteries and especially with large artery stiffness. It is known from various studies that rising blood pressure is associated with increased cardiovascular risk. In the elderly, the most powerful predictor of risk has increased pulse pressure due to decreased diastolic and increased systolic blood pressure. All evidence indicates that treating the elderly hypertensive patient will reduce the risk of cardiovascular events. However, there is no evidence yet for the very elderly. [6]

Objectives

- To assess the existing Blood Pressure of the Hypertensive Geriatric Group
- To assess the effectiveness of Guided Imagery Therapy among hypertensive Geriatric Group.
- To find an association between Guided Imagery Therapy on Hypertensive Geriatric Group with selected demographic variables.

MATERIALS AND METHODS

The research approach adopted for this study is an evaluative approach. The research design selected for this present study was quasi experimental research design. The study was conducted on a hypertensive geriatric group residing in the selected old age home in Pune city by taking

30 each sample in both experimental and control groups using non-probability convenient sampling technique. Guided imagery therapy was the independent variable and the dependent variable was level of blood pressure. Data were collected, tabulated and analyzed in terms of the objectives of the study using descriptive and inferential statistics.

Criteria for Selection of Sample

1. **Inclusion Criteria**

Hypertensive geriatric group

- Residing in selected old age home in Pune city
- Who were able and willing to participate in the study.
- Who were able to follow instructions

2. **Exclusion Criteria**

Hypertensive geriatric group

- Who are not willing to participate in the study
- Clients who receive other complementary therapies to reduce blood pressure.
- Clients who have already undergone for guided imagery therapy to reduce blood pressure.
- Clients with serious medical illness.
- Clients having hearing problems.

Sample characteristics

Non probability convenient sampling technique was chosen from the study population. The data obtained to describe the sample characteristics include age, gender, education, occupation, duration of occupation, number of children, history of hypertension and medications, other medical illnesses, use of other alternative therapies for reducing blood pressure with duration.

Description for final tool

Final tool was prepared as per the suggestions of experts. The final tool consists of 3 sections:-

Section1: Demographic variables

A pro forma for selected personal information was used to collect the sample characteristics. The characteristics include age, gender, education, occupation, duration of occupation, number of children, history of hypertension and medications, other medical illnesses, use of other alternative therapies for reducing blood pressure with duration.

Section2:

- Part 1: Pretest checklist of blood pressure to record the impact of guided imagery therapy
- Part 2: Posttest checklist of blood pressure to record the impact of guided imagery therapy

The steps used in data collection were as mentioned below

1. The investigator introduced her-self and explained the purpose of conducting the study to the study subjects.
2. After considering the inclusion and exclusion criteria, subjects were selected as per the convenience to experimental and control group.
3. After obtaining a valid consent, for the experimental group, respondents were assessed by the investigator and monitored the blood pressure before giving intervention and then guided imagery therapy was given in three stages, relaxation, audio stimulation followed by positive suggestion for 30 minutes in lying down position.
4. Posttest blood pressure was assessed and recorded.
5. The control groups were under observation, but were being treated by other nurses and monitored their blood pressure along with the experimental group; hence they are getting their routine care.
6. According to the observation of each subject, findings were noted on the data sheet.
7. The collected data was tabulated and analyzed using descriptive and inferential statistics.

RESULTS

In order to find out the impact of guided imagery therapy on blood pressure, the data gathered were tabulated, analyzed and interpreted using descriptive and inferential statistics.

Section I: Distribution of respondents in relation to demographic data

Table 1: Distribution of respondents according to Age (N=30 in experimental and control group)

Sr. No.	Characteristic of subjects.	Experimental group		Control group	
Age		Frequency {f}	Percentage %	Frequency{f}	Percentage%
1	65 - 70 years	10	33.33	12	40
2	71 - 75 years	14	46.67	13	43.33
3	75 - 80 years	06	20	05	16.67
4	81 - 85 years	00	00	00	00
5	85 years and above	00	00	00	00
Total		**30**	**100**	**30**	**100**

Table 1 shows the distribution of demographic data of respondents according to age. The table shows that 33.33% of the respondents from experimental group were from age group 65-70years, 46.67% were from 71 - 75 years, 20% of them were 75-80 years. 40% of the respondents from control group were from age group 65 - 70 years, 43.33% of them were from 71 - 75 years and 16.67% of them were from the age group of 75 to 80 years.

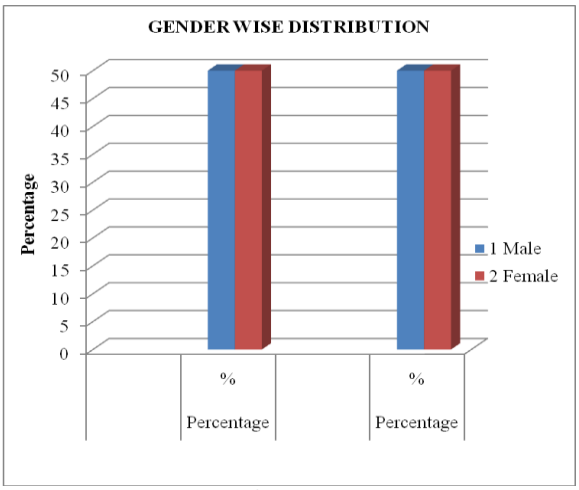

Figure no.1: Distribution of respondents according to Gender (N=30 in experimental group, 30 in control group)

Figure no. 1 reveals that in experimental and control group 50% of the samples were male and female.

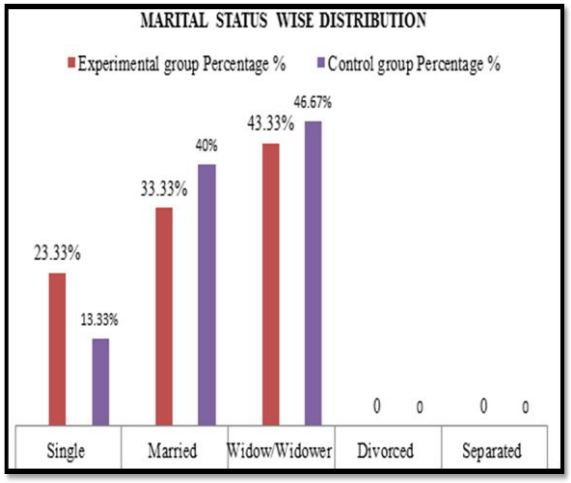

Figure 2: Distribution of the subjects according to marital status (N=30 in experimental and in control group)

Figure no. 2 shows the distribution of demographic data of respondents according to marital status. The graph shows that 23.33% of the respondents from experimental group were single, 33.33% of them were married and 43.33% of them were widows/widower. 13.33% of the respondents from control group were married, 40% of them were married and 46.67% of them were widows/widower.

Table 2: Distribution of the subjects according to previous occupation (N=30 in experimenting and in control group)

Sr. No.	Characteristic of subjects.	Experimental group		Control group	
Previous occupation		Frequency {f}	Percentage %	Frequency {f}	Percentage %
1	Home Maker	13	43.33	00	00
2	Farmer	03	10	03	10
3	Labour	00	00	00	00
4	Business	06	20	09	30
5	Professional	08	26.67	18	60
Total		**30**	**100**	**30**	**100**

Table no. 2 shows the distribution of demographic data of respondents according to **previous occupation**. The graph shows that 20% of the respondents from experimental group were homemaker, 20% of them were farmer and 60% of them were professionals. 60% of the respondents from control group were homemaker, 20%

of them were doing business and 20% of them professionals.

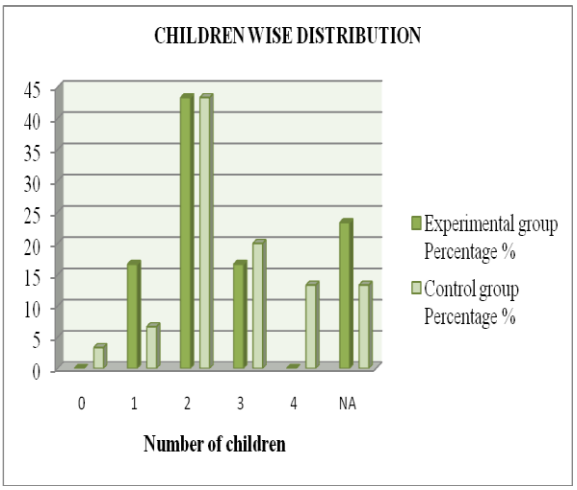

Figure no.3: Distribution of the subjects according to number of children (N=30 in experimental group, 30 in control group)

Figure no.3 reveals that, in experimental group, 16.67% of the respondents had one child, 43.33% of them had two children and 16.67% of them had three children. 3.33% of the respondents from control group had no children, 6.67% of them had one child, 43.33% of them had two children and 13.33% of them had four children.

Figure no.4 depicts that, in experimental group, majority of the respondents (60%) had education up to post graduation and above, 20% of them had education up to high school. Likewise 26.67% of the respondents from control group had middle education, 16.67% had education up to post graduation and above, 13.37% of the respondents had high school and intermediate education.

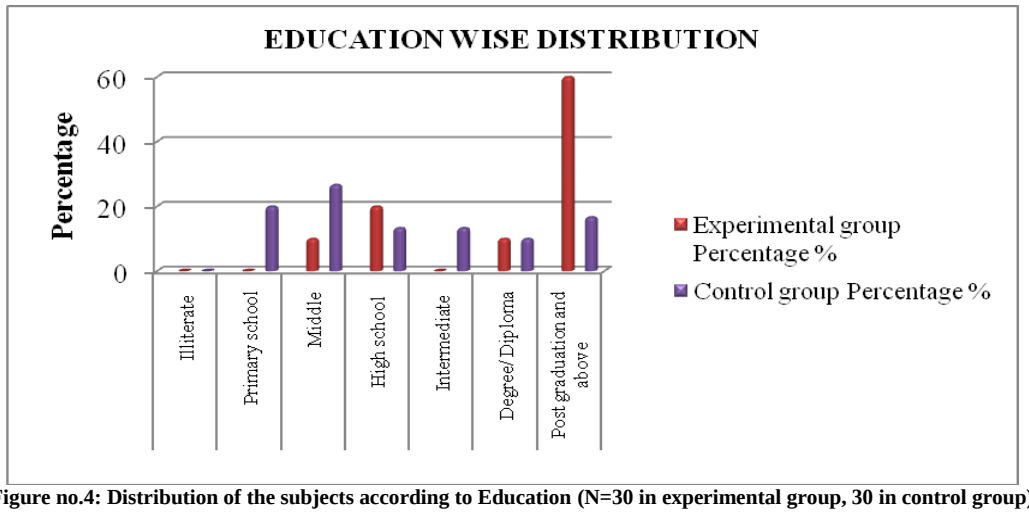

Figure no.4: Distribution of the subjects according to Education (N=30 in experimental group, 30 in control group)

Table no.3: Distribution of the subjects according to Duration of stay in the centre (N=30 in experimental group, 30 in control group)

Sr. No.	Characteristic of subjects.	Experimental group		Control group	
Duration of stay in the centre		Frequency {f}	Percentage %	Frequency {f}	Percentage %
1	Less than one year	03	10	02	6.67
2	1 to 3 years	05	16.67	07	23.33
3	3 to 6 years	11	36.67	14	46.67
4	6 to 9 years	09	30	06	20
5	> 9 years	02	6.67	01	3.33
Total		**30**	**100**	**30**	**100**

Figure no. 5 shows the distribution of demographic data of respondents according to duration of Hypertension. The graph shows that 23.33% of the respondents from experimental group had a duration of hypertension from 4 to 8 years, 33.33% of the respondents had a duration of hypertension from 8 to 12 years, 23.33% of the respondents had a duration of hypertension from 12 to 16 years, 10% of the respondents had a duration of hypertension for 16 to 20 years and more than 20 years. 10% of the respondents from control group had a duration of hypertension

from 4 to 8 years, 23.33% of the respondents had a duration of hypertension from 8 to 12 years and 12 to 16 years, 30% of the respondents had a duration of hypertension for 16 to 20 years, and 13.33% of the respondents had a duration of hypertension for more than 20 years.

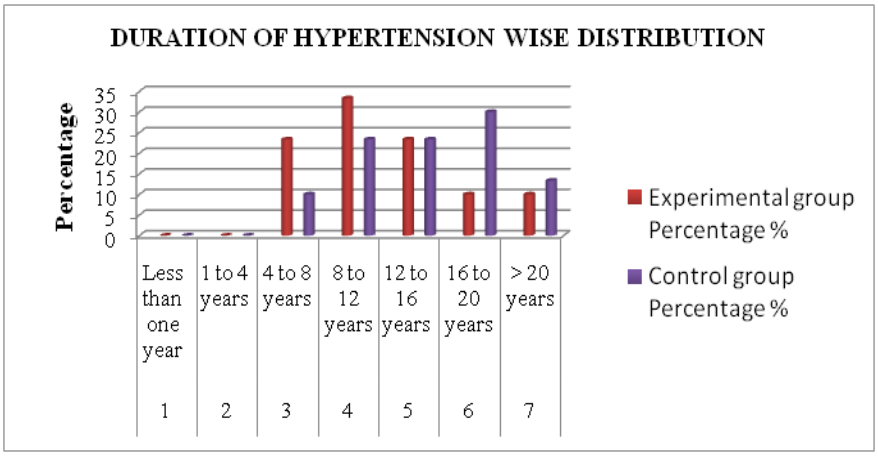

Figure 5: Distribution of the subjects according to Duration of Hypertension (N=30 in experimental group and in control group)

SECTION II: A, Analysis of data related to the existing blood pressure of the hypertensive geriatric group (pre- test)

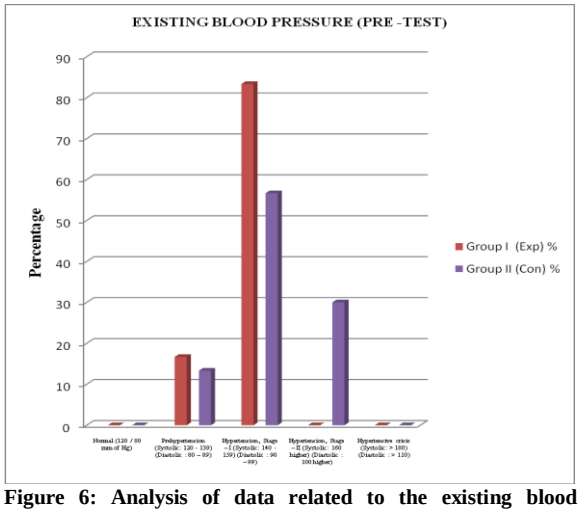

Figure 6: Analysis of data related to the existing blood pressure of the hypertensive geriatric group (pre- test) (N=30)

Figure 6: Graph states that, in the experimental group, 16.67% of the geriatrics had pre hypertension, 83.33% of them had stage - I hypertension. In the control group, 13.33% of them had Prehypertension and 56.67% of them had stage - I hypertension and 30% of them had stage- II hypertension.

SECTION II: B, Analysis of data related to the existing blood pressure of the hypertensive geriatric group (post- test)

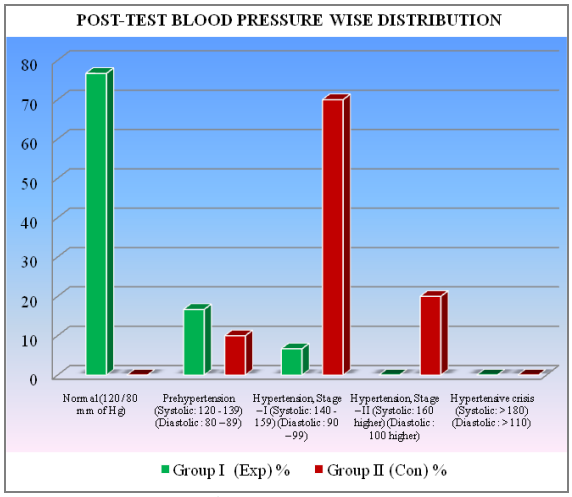

Figure 7: Analysis of data related to the existing blood pressure of the hypertensive geriatric group (post- test) (N = 30)

Figure 7: In Experimental group, 16.67% of the geriatrics had pre hypertension, 83.33% of them had stage - I hypertension. In the control group, 13.33% of them had Prehypertension and 56.67% of them had stage - I hypertension and 30% of them had stage- II hypertension.

The research hypothesis tested under this section was

Section III: Pre and post effectiveness of Guided Imagery Therapy among hypertensive Geriatric Group.

Paired t-test for effectiveness of guided imagery among geriatrics:

Table no.4: Paired t-test was used for comparison of pre-test and post-test blood pressure scores among geriatrics in experimental group (N= 30)

Test	Mean (Pulse pressure)	SD	t	Df	p-value
Pre – test	58.27	12.05	3.393	29	0.002
Post - test	49.2	9.82			

In table no.4, t value was found to be 3.393 at 29 degrees of freedom. P-value at 29 degrees of freedom was 0.002. Since the p-value is less (0.05), the null hypothesis is rejected. This indicates that guided imagery was effective on hypertensive geriatrics in experimental group.

Table no.5: Paired t-test was used for comparison of pre-test and post-test blood pressure scores among geriatrics in control group (N= 30)

Test	Mean (Pulse pressure)	SD	t	df	p-value
Pre - test	61.6	7.527	1.149	29	0.260
Post - test	59.4	8.681			

In table no.5, t value was found to be 1.149 at 29 degrees of freedom. p-value at 29 degrees of freedom was 0.260. Since the p-value is more (0.05), the null hypothesis is accepted. This indicates that guided imagery was not effective on hypertensive geriatrics in control group.

Table no.6: Paired t-test was used for comparison of post-test blood pressure scores among geriatrics in control and experimental group (N= 30)

Test	Mean (Pulse pressure)	SD	t	df	p-value
Control group	60.93	8.925	4.288	29	0.000
Experimental group	50.53	9.839			

t value was found to be 4.288 at 29 degrees of freedom. p-value at 29 degrees of freedom was 0.000. Since the p-value is less(0.05), the null hypothesis is rejected. This indicates that guided imagery was effective on hypertensive geriatrics in experimental group.

SECTION: IVone way analysis of variance (ANOVA) is used to assess association of hypertensive score among geriatrics with selected demographic variables

p value is large (greater than 0.05), there is no evidence against null hypothesis so there is no significant association with the selected demographic variable.

Table no.7: Association between hypertensive score among geriatrics with selected demographic variables (n=60)

Sr. No	Demographic variables	F	P
1	Age	0.92	0.439
2	Gender	0.82	0.38
3	Marital status	0.46	0.28
4	Number of children	0.23	0.15
5	Occupation	0.43	0.25
6	Education	0.87	0.40
7	Duration of stay in the centre	0.92	0.439
8	Duration of Hypertension	0.88	0.405

DISCUSSION

Findings related to guided imagery therapy on blood pressure

As per the figure 3 and 4, it shows that, in pre-test observation of experimental group 83.33% of the respondents had stage I hypertension, when compared with the post-test, only 6.67% of them had stage-I hypertension in experimental group. So, the study concluded that, guided imagery therapy was effective in experimental group.

The present study proved that Guided Imagery Therapy on hypertensive geriatric clients in the experimental group had a significant effect in the reduction of blood pressure. Similarly a study conducted by Maxwell V Rainforth, Robert H. Schneider, Sanford I. Nidich, Carolyn Gaylord-King, John W. Salerno, James W. Anderson proved that, for Stress reduction programs in patients with elevated blood pressure: by updated systematic review of the published literature and identified 107 studies on stress reduction and BP. Seventeen trials with 23 treatment comparisons and 960 participants with elevated BP met criteria for well-designed randomized controlled trials and were replicated within intervention categories. Meta-analysis was used to calculate BP changes for biofeedback, -0.8/-2.0 mm Hg (***P*** = NS); relaxation-assisted biofeedback, +4.3/+2.4 mm Hg (***P*** = NS); progressive muscle relaxation, -1.9/-1.4 mm Hg (***P*** = NS); stress management training, -2.3/-1.3 mm (***P*** = NS); and the Transcendental Meditation program, -5.0/-2.8 mm Hg (***P*** = 0.002/0.02). The Transcendental Meditation program reduced the BP and improved other CVD risk factors and clinical outcomes. [6] Thus it concludes that complementary

therapy can reduce blood pressure and thereby reduce the cardio vascular risk factors.

Limitations

- This study was limited to 60 hypertensive geriatric group from one selected old age home of Pune city. This limits the generalization of findings.
- The study was limited to the Hypertensive Geriatric Group who was having Hypertension with full level of consciousness.
- The study was limited to the Hypertensive Geriatric Group who was having Hypertension with no hearing problems and in selected Old-Age Home of Pune City.

Recommendations

- The study can be replicated on a large number of samples to generalize the findings.
- The study can be done using other alternative therapies or techniques like yoga, aroma therapy, pranayama.
- The study may be conducted in different settings.
- The study can be conducted on the knowledge and attitude of hospital personnel to the policy of administration of guided imagery therapy during treatments and procedure.
- A comparative study can be done among Guided Imagery Therapy and other alternative therapies such as yoga, pranayama, aroma therapy etc. in different settings.

CONCLUSION

Based on the analysis of the findings of the study, the following inference was drawn. Guided imagery therapy helps the hypertensive geriatric group to reduce the blood pressure and thereby provides relaxation and good sense of well-being. The main interest of the study was to make the geriatrics aware about the benefits of doing guided imagery therapy by practicing them. So the study states that guided imagery therapy helps to reduce the blood pressure level and thereby provides relaxation.

ACKNOWLEDGEMENT

"As long as you have the blessing of your parents, it does not matter even if you live in the mountains". First and foremost, I have to thank my parents for their love and support throughout my life. Thank you both for giving me strength to reach for the stars and chase my dreams. I would also like to show my deep gratitude to my ever-loving sister Mrs. Suvarna Prashant who was always there for cheering me up and stood by me through the good and bad times. She was always supporting me and encouraging me to complete my study. She receives my deepest gratitude and love, for her dedication and the many years of support during my studies that provided the foundation for this work.

I would like to sincerely thank my mentor Ms. Shital Waghmare, Associate Professor, Dept. Of Obstetrics and Gynaecology, SCON, Pune for instilling in me the qualities of being a good investigator.

I express my sincere thanks to Dr. S. G. Joshi, H.O.D of Nursing Research and statistics, for his guidance in preparation of the research proposal and the extreme support that was provided by him throughout the study.

I express my sincere thanks to Sr. Usha, Holistic Health Centre, Bibwewadi, Punefor training me in Guided Imagery Therapy and providing her immense support and guidance to carry out the study.

My sincere thanks to Administrators of selected old-age homes in Pune city for giving me the permission to conduct the study.

I thank all the participants in the study with enthusiasm without whose consent this study would not have been possible.

Thank you, Lord, for always being there for me.

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How to cite this article: Mane RV, Waghmare S. A study to assess the impact of guided imagery therapy on blood pressure among hypertensive geriatric group residing in selected old age home of Pune city. Int J Health Sci Res. 2016; 6(7):228-236.

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