

Effectiveness of Guided Imagery Technique on Blood Pressure and Stress Level among Elderly People

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Abstract: A Quasi experimental study was conducted to assess and evaluate the effectiveness of guided imagery technique on blood pressure and stress level of elderly people in selected old age homes at Haryana in the month of December to February 2015. The purposive sampling technique was used to gather data by using Glazer stress life style questionnaire and blood pressure record sheet for 60 elderly people (30 in experimental and 30 in comparison group). Pre test was conducted on day-1 in both groups and guided imagery technique was administered with CD in experimental group for one hour daily for a week and elderly people were motivated for self practicing after that. Post test -1 was taken on 10th day and post test- 2 on 24th day of pre test. No intervention was done for comparison group. Findings of study revealed that there were significant differences in pre test, post test-1 and post test-2 f value of systolic and diastolic blood pressure was 34.39 and 19.53 (as evident from the computed repeated measure one way anova) was found to be statistically significant at 0.05 level of significance in experimental group whereas 0.89 and 0.60 not significant in a comparison group and pre test, post test-1 and post test-2 f value of stress score was 217.14 found to be statistically significant at 0.05 level of significance in an experimental group whereas 1.055 not significant in a comparison group. The study concluded that guided imagery technique had significant effect on blood pressure and stress level among elderly people.

Keywords: Guided imagery, blood pressure, Stress level, elderly people, and old age homes

1. Introduction

Background of the Study

Aging is the normal process of the related change, which begins with birth and continues throughout the life. Old age is the final phase of the life span. Ageing is an inevitable developmental phenomenon bringing along a number of changes in the physical, hormonal and the social condition. Ayurveda termed 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. [1]

In the year 2014 old age population was 236/10,000 in the world. In 2016, almost 500 million people worldwide will be 65 and older. By 2030 it is estimated that total is projected to increase by one billion, accounting 13% of the total population. In India old age population contributes 1/20 in the total population. In the year 2002 there were more than 81 million elderly in India and this figure is expected to go up over 324 million in the year 2050. According to parliament discussion India's population of senior citizen above 60 would reach 173 million by 2026. [2]

In India, non communicable diseases were responsible for 53% of deaths and 44% of disability. Developing countries, like India, are likely to face an enormous burden of non communicable diseases in future and out of these diseases, hypertension is one of the most important treatable causes of mortality and morbidity in the elderly population. Further,

high blood pressure (BP) is a modifiable risk factor for cardiovascular disease. [3]

Majority of older persons with hypertension are not detected or are not adequately treated for hypertension. Measures should be taken to diagnose hypertension and prevent or postpone its complications in this age group as the burden of hypertension is bound to increase due to increasing life expectancy rates. Health seeking behaviour of the elderly is influenced by their economic instability, reduced physical endurance, social isolation, reduced cognitive ability, dependency, and loneliness. This makes them more vulnerable to suffer or succumb to illnesses, which may be treatable, or whose disabling effects could be postponed. [4]

2. Need of the study

India is a developing country, which lacks organized services for the elderly in the health, social or economic sectors. The health services available for the elderly in India are generally contained within the health services for the general population, without any special or specific initiatives for this group. It is estimated that 45% of the elderly have chronic disease and disabilities. One among this disease is stress. So specialized geriatric care is necessary. [5]

The estimated 57 million global deaths in 2008, out of this 36 million (63%) were due to non communicable diseases (NCDs). The largest proportion of death is caused by cardiovascular diseases (48%). In terms of attributable deaths, raised blood pressure is one of the leading behavioural and physiological risk factor to which 13% of

global deaths are attributed. Hypertension is reported to be the fourth contributor to premature death in developed countries and the seventh in developing countries. The prevalence of hypertension in the late nineties and early twentieth century varied among different studies in India, ranging from 2-15% in Urban India and 2-8% in Rural India. [6]

A recent study was conducted in the University of Chicago in 2011 showed that loneliness is injurious to health, especially in old age. Loneliness and physical ageing can prove to be destructive combination, resulting in more stress hormones flowing through the body. [7]

One research was conducted in general hospital of Assam in 2012 showed that when individuals have access to positive mental images and to a state of body relaxation, they are able to reorient their thought away from unpleasant stimuli. Thus, positive thoughts contribute to an improvement in feeling about oneself and the world. [8]

Guided Imagery was effective in improving mood states in individuals with variety of illnesses. When persons have the experience of positive thoughts, their mind represent more than well-beings; it also represent well-thinking. The results of many studies showed the positive effects of Guided Imagery in mood regulation, although comfort was not measured. [9]

3. Objective

To assess and evaluate the effectiveness of guided imagery technique on blood pressure and stress level of elderly people.

4. Methodology

A Quasi experimental research approach (non equivalent comparison group pre test –post test only design) was used with 60 elderly people selected in conveniently selected old age homes by using purposive sampling technique out of which 30 in experimental groups and 30 in comparison group. who met the inclusion criteria. The reliability of the Glazer life style stress questionnaire was found to be 0.80 with cronbach’s alpha and 0.7 with inter-rater reliability for blood pressure record sheet. Blood pressure of all inmates was checked for inclusion criteria. Pre test was conducted on day-1 in both groups and guided imagery technique was administered with CD in experimental group for one hour daily for a week and elderly people were motivated for self practicing after that. Post test -1 was taken on 10th day and post test- 2 on 24th day of pre test. No intervention was done for comparison group.

Ethical approval to conduct study was obtained from institutional ethical committee of M.M University, Mullana .Assent form was prepared in Hindi and the consent was taken from the elderly people regarding their willingness to participate in the research project. The purpose for carrying out research project was explained to the subjects and assurance of confidentiality was given.

5. Results

section-I

Socio Demographic Profile of the Elderly People

Out of 60 elderly people 37% in experimental group and 33% in comparison group were in the age group 60-64 years. In both groups there were equal numbers of male (63%). One third (33%) of elderly people in experimental group were single and were widow or widower in experimental group whereas in comparison group more than one third (43%) of elderly people were married .As per educational status more than half (53%) elderly people were non literate in experimental group and 50% in comparison group. More than half (70%) elderly people in experimental and 60% in comparison group had economical assistant from pension only. Majority (83%) of the elderly people were vegetarian in both groups. More than one third (37%) of elderly people in experimental group had duration of stay 1-3 years whereas in comparison group 43% of elderly people had duration of less than one year. As per the family history of hypertension majority of the elderly people (77%) in experimental and 66% in comparison group had no history of hypertension. More than half (57%) elderly people were doing physical exercises daily in experimental and 60% in comparison group. More than half (63%) in experimental group and 56% in comparison group did not had any history of substance abuse. More than half (60%) of elderly people in experimental and 63% in comparison group were not having history of an associated illness.

The findings of calculated chi square test was found to be statistically not significant at 0.05 level of significance in experimental and comparison group it revealed that both the groups were homogeneous with regard to their selected socio demographic profile.

SECTION-II

Evaluation of Effectiveness of Guided Imagery Technique in terms of Blood Pressure Values of Elderly People.

Table 1: Repeated Measure One Way Anova of Blood Pressure Values of Elderly People N=60

Factor	mean	Standard deviation	f value	p value
Experimental group				
Systolic				
Pre test	135.47	1.814		
Post test-1	129.93	2.318	34.38	<0.001*
Post test-2	136.67	5.738		
Diastolic				
Pre test	83.47	2.968		
Post test-1	80.40	0.968	19.53	<0.001*
Post test-2	85.60	4.709		
Comparison group				
Systolic				
Pre test	134.20	2.483		
Post test-1	136.07	3.039	0.89	0.416 ^{NS}
Post test-2	131.07	24.96		
Diastolic				
Pre test	81.20	2.657		
Post test-1	83.27	4.623	0.60	0.551 ^{NS}
Post test-2	83.93	16.46		

Significant (p≤0.05)

The data presented in table-1 shows that pre test, post test-1 and post test- 2 f value of systolic and diastolic blood pressure was found to be statistically significant 34.39 and 19.53 in an experimental group whereas in comparison group f value was 0.89 and 0.60 was found to be statistically non significant at 0.05 level of significance which shows that after implementation of guided imagery technique there was significant differences in mean pre test, post test-1 and post test-2 systolic and diastolic blood pressure values in experimental group as compare to comparison group.

Table 2: Mean, Mean Difference, Standard Error of Mean Difference and unpaired 't' test Value of Blood Pressure value of Elderly People N=60

Blood pressure level	group	Mean	mean _D	SD _D	SD _{MD}	t value
Pre test	Exp.	135.4	0.8	0.17	0.204	1.60 ^{ns}
	Comp	134.2				
Diastolic	Exp.	83.47	2.2	0.11	0.11	0.48 ^{ns}
	Comp	81.20				
Post test-1	Exp.	129.9	6.14	0.27	0.30	2.96*
	Comp	136				
Diastolic	Exp.	80.40	2.87	0.08	0.27	2.76*
	Comp	83.27				
Post test-2	Exp.	136.6	5.6	0.68	0.31	2.19*
	Comp	131				
Diastolic	Exp.	85.60	1.6	0.23	0.36	2.18*
	Comp	83.93				

“t” (58) = 2.00, * significant (p ≤ 0.05), ^{ns} non significant

The data presented in table 2 shows that the computed 't' value in pre test was found to be statistically not significant at 0.05 level which showed that both groups were homogenous in regard of systolic and diastolic blood pressure in pre test. Whereas computed 't' value in post test-1 and post test-2 was found to be statistically significant at 0.05 level which showed that the mean difference between post test-1 and post test 2 blood pressure value of elderly people in experimental group was a true difference and not by chance which indicates that the guided imagery technique had a significant effect on systolic and diastolic blood pressure.

Section III

Evaluation of Effectiveness of Guided Imagery Technique in terms of Stress Level of Elderly People between Experimental and Comparison group.

Table 3: Repeated Measure One Way Anova of Stress Level of Elderly People N=60

Factor	mean	Standard deviation	f value	p value
Experimental group				
Pre test	85.87	8.32		
Post test-1	53	8.25	217.41	<0.001*
Post test-2	70.37	8.49		
Comparison group				
Pre test	89	6.04		
Post test-1	93.77	5.19	1.053	0.356 ^{NS}
Post test-2	96.77	7.83		

Significant (p ≤ 0.05)

The data presented in table-3 shows that pre test, post test-1 and post test-2 f value of stress level was found to be statistically significant 217.14 at 0.05 level of significance in an experimental group Whereas f value was found to be statistically non significant 1.053 at 0.05 level of significance in a comparison group.

Which shows that the guided imagery technique had a significant effect on stress score in experimental group whereas in comparison group there was no exposure of guided imagery technique so that there was no significant difference in mean stress score of elderly people.

Table 4: Mean, Mean Difference, Standard Error of Mean Difference and unpaired 't' test Value of Stress Level N=60

Blood pressure level	group	Mean	mean _D	SD _D	SD _{MD}	t value
Pre test	Exp.	85.87	3.13	1.27	0.264	1.37 ^{ns}
	Comp	89				
Post test-1	Exp.	53	40.7	1.20	0.18	3.19*
	Comp	93.77				
Post test-2	Exp.	70.37	26.4	0.37	0.01	2.40*
	Comp	96.77				

“t” (58) = 2.00, * significant (p ≤ 0.05), ^{ns} non significant

The data presented in table 4 shows that the computed 't' value in pre test was found to be statistically not significant at 0.05 level which showed that both groups were homogenous in regard of stress level in pre test. Whereas computed 't' value in post test-1 and post test-2 was found to be statistically significant at 0.05 level which showed that the mean difference between post test-1 and post test 2 stress score of elderly people in experimental group was a true difference and not by chance which indicates that the guided imagery technique had a significant effect on systolic and diastolic blood pressure.

Section-IV

Correlation between Blood Pressure and Stress Score of Elderly People

There was a significant correlation between blood pressure and stress score as evident by computed 'r' value. The data also shows that stress having minimal effect on physiological parameters (blood pressure). But physiological parameter does not go with psychological condition (stress) in experimental group because of implementation of guided imagery technique. Thus guided imagery technique is effective to bring changes in blood pressure and stress level among elderly people.

6. Discussion

The present study shows that the guided imagery technique was effective to maintain blood pressure level as evidenced by calculated repeated measure one way annova. These findings were consistent with another study conducted by Jose Rojan on effectiveness of guided imagery technique on a blood pressure level among elderly people in a selected old age homes of Mangalore in 2009. The study results revealed that the guided imagery relaxation technique had significant

impact on a blood pressure level after the implementation of guided imagery technique. [10]

The findings of the present study shows that there was a significant correlation between blood pressure and stress score of elderly people. The findings of present study were consistent with another study conducted by Linda Schaffer on guided imagery as innovative approach to maintain blood pressure and stress level in south Korea in 2013 .The findings showed that there was positive correlation between pre and post test systolic- diastolic blood pressure with stress [11]

7. Conclusion

The study concluded that after implementation of guided imagery technique there was a significant difference between systolic, diastolic blood pressure and stress level in experimental group as than comparison group. So that guided imagery technique has significant effect on maintaining systolic and diastolic blood pressure and reducing stress level among elderly people. So all these benefits are required for old age persons.

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