Effectiveness of Progressive Muscle Relaxation Therapy on Reduction of Stress among Senior Citizens Residing in Selected Old Age Home, Berhampur

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Abstract

One group pretest - posttest pre-experimental research design and quantitative approach was undertaken in Jara Nivas, Gopalpur, Berhampur, Odisha with the objective to assess the effectiveness of PMRT in reduction of stress among senior citizens, residing in selected old age home, Berhampur . A total of 30 sample were selected using convenience sampling technique. A structured demographic questionnaire and Modified Perceived Stress Scale (PSS) was used to collect the data. The results revealed that during pre-test the mean percentage of samples with severe stress was (74.17%) which was reduced to (49.17%) during post-test. The mean difference between the posttest and pre-test overall stress score of senior citizens was found to be highly significant at p=<0.01, df- 29. The study concluded that Progressive muscle relaxation therapy was significantly effective in reducing Stress among Senior citizens residing in selected old age home.

Keywords: Progressive Muscle Relaxation Therapy; Stress Reduction; Senior Citizens and Old Age Home

Introduction

Old age is a culmination of many previous intra psychic and intrapersonal changes. Owing to retirement from job and due to reduction in income, elderly people have a feeling of loneliness, rejection and insecurity which triggers stress in them. The quality of life is determined by socio-economic security, psychological wellbeing and perceived satisfactory health. Old age is an in curable disease [1]. Stress cannot be avoided but its negative effects can be counteracted by learning how to evoke the *relaxation response,* a state of deep rest that is the polar opposite of the stress response.

Globally 450 million people suffer from mental disorder. About 50% of senior citizen experience mental stress due to loss of spouse, loss of activity, economic dependency, confinement to bed because of physical and mental illness. Stress management is the need of the hour. There are nearly 104 million elderly persons (aged 60 years or above) in India; 53 million females and 51 million males. Both the share and size of elderly population is increasing.

Between 2001 and 2011, the growth in elderly population has shoot up to 36 percent while the same was 25 percent in the earlier decade. Percentage share of elderly persons in the population of India is ever increasing since 1961. While in 1961, 5.6 percent population was in the age bracket of 60 years or more, the proportion has increased to 8.6 percent in 2011. The growth in elderly population is due to the longevity of life achieved because of economic well-

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being, better medicines and medical facilities and reduction in fertility rates. According to Central Statistics Office in Odisha there are 39.84 lakh elderly persons (aged 60 years or above) that comprises 9.5 % of total population. Common senior citizen's health problems include obesity, indigestion, muscle weakness, stroke, pain attack, heart burn, diabetes, high cholesterol and high B.P. Most of these conditions are triggered by stress. A good way to fight against these is to take up some physical exercises.

Derek Bryan reported in CAM Commons Evidence-Based Complementary and Alternative Medicine for the Twenty-First Century that Progressive muscle relaxation is a type of therapy used to help patients to control the levels of tension in their muscles and hence reduces stress. To combat the negative effect of stress it is necessary to take up some physical exercise. Here the researcher felt that PMRT as it is found from previous studies to be one of the most effective, convenient, and easy technique that takes 10 to 15 minutes only for reduction of stress. Hence the investigator is interested in performing PMRT for stress reduction among senior citizens.

The objectives of the study were to find out the effectiveness of Progressive Muscle Relaxation Therapy in reduction of stress among senior citizens residing in selected old age home at Berhampur. The study was based on the following assumptions that, senior citizens experience considerate level of stress, data collected from the respondents were considered to be true.

Hypothesis

$H0_1$: There is no significant difference between mean post-test stress level and mean pre-test level of stress among senior citizens residing in selected old age home of Berhampur.
$H0_2$: There is no significant association between pre -test level of stress before administration of progressive muscle relaxation therapy of senior citizens with their selected demographic variables.

Methodology

One group pretest - posttest pre-experimental research design with quantitative approach was adopted for the present study. The study samples were all elderly people with the age group of 60 years and above in the Selected old age home of Berhampur and present at the time of study. The study was conducted at Jara Nivas, Gopalpur, Berhampur. Sample size comprises of 30 samples (n=30) and convenience Sampling technique was used to select study samples. Demographic characteristics of senior citizens consists of eleven items which includes age, sex, marital status, type of family, area of residence, monthly income, education, habits, previous source of information regarding stress management and any disease conditions.

In the present study, the dependent variable was stress among senior citizens and the independent variable is the "Progressive Muscle Relaxation Therapy''. Data collection tool consisted of (a) Demographic Data (11) items and (b) Modified Perceived stress scale.

A Demographic questionnaire and Perceived Stress Scale was prepared for the study. The tool was being validated by the experts in the field. The inclusion criteria are the senior citizens who were staying at selected old age home at Berhampur, age equal to 60 years or above, and willing to participate in the study. The exclusion criteria for the present were the participants those were too sick inmates of selected old age home, senior citizens who are not able to follow instruction due to physical disability, inmates not willing to participate were excluded (Tables 1-4).

Data Analysis

Stress score									
Level of stress	**Frequency**	**Maximum score**	**Pre-test**			**Post-test**			**Difference in mean percentage**
			Mean	**S.D**	**Mean %**	**Mean**	**S.D**	**Mean %**	
Mild stress	3	40	12	0.8	30	5	0.8	12.5	17.5
Moderate stress	21	40	22.1	2.5	55.1	10.7	2.7	26.7	28.45
Severe stress	6	40	29.7	1.6	74.2	19.7	2	49.2	25
Overall total	30	40	22.6	5.1	56.4	11.8	4.7	29.5	26.93

Table 1: Category wise comparison of Mean, S.D, Mean percentage of pre and post-test stress score of senior citizens. (N = 30).

Comparison of mean, S.D , mean percentage of pre-test and post-test stress level of scores of senior citizens residing in the old age home shows that , during post-test highest mean percentage was reduced to 49.17% which was 74.17 during pre -test was obtained by samples with severe level of stress. However lowest mean percentage was reduced to (12.5%) which was 30 during pre -test was obtained by respondents with mild level of stress. Further when comparing the pre-test stress score it was observed that stress score varies between 74.17 percentages to 30 percentages which was reduced to 28.45 to 17.5 during post-test.

The overall mean stress score during pre –test was 22.57 which were reduced to 11.8 of total score. It indicates that PMRT was effective in reducing overall stress among senior citizens residing in selected old age home of Berhampur.

Testing of Hypothesis

- **H0$_1$**: There is no significant difference between mean pre- test stress level and mean post-test stress level among senior citizens residing in selected old age home of Berhampur at 0.01 level of significance.
- **H0$_2$:**There is no significant association between pre-test level of stress before administration of progressive muscle Relaxation therapy and the selected demographic variables of senior citizens.

Results

Symptoms of stress	Stress symptoms		Effectiveness of PMRT X-Y=E
	Pretest % (X)%	Post-test% (Y)%	
Headache	60.83	16.67	44.17
Tense muscle, in neck and back	62.5	21.67	40.83
Fatigue	58.33	31.67	26.67
Worry	55.83	36.67	19.17
Irritability	55	31.67	23.33
Insomnia	50.83	16.67	34.17
Bouts of anger	55	39.17	15.83
Boredom	57.5	39.17	18.33
Eating too much or too little	55.83	32.5	23.33
Loose motion/constipation	52.5	29.17	23.33

Table 2: Item wise comparison of pre and post-test level of stress.

Effectiveness of PMRT on reduction of stress symptom shows that the highest percentage of effectiveness 44.17 percentages was found in reducing headache and lowest percentage 15.83 percentage of effectiveness was found on reducing bouts of anger in samples. Hence it reveals that effectiveness of PMRT ranges from (44.17%) to (15.83%) in reducing stress symptoms among senior citizens.

SL.NO	Level of stress	"t" value	Df	Table value	Remarks
1	Mild stress	10.45	2	9.93	S
2	Moderate stress	14.29	20	2.85	HS
3	Severe stress	9.53	5	4.03	HS
4	Overall stress	8.79	29	2.76	HS

p=<0.01
Table 3: Paired "t" value of post and pre-test stress score of senior citizens.

Paired "t" test calculated to assess the significant difference between post and pre-test stress score shows that highly significant difference were found in, severe, moderate and overall level of stress ,while significant difference were found in mild level of stress at p=<0.01 . Thus the difference in mean score value related to the above mentioned level of stress were true difference. As the calculated value is higher than table value hence it states that null hypothesis was

rejected statistical hypothesis was accepted.

This result agrees with the experimental pre-test post-test control group study conducted by Kumutha, et al. that there were considerable difference in mean score of stress between pre-test & post-test which was 3.94±1.01 and paired 't' value was 5.59 at the level of p0.05. The findings suggest the beneficial effects of progressive muscle relaxation technique on reducing stress among geriatric population.

Sl. No	Demographic Variables	X² value	Df	Table value	Level of significance
1	Age	1.26	1	3.84	Not significant
2	Sex	1.48	1	3.84	Not significant
3	Marital status	0.36	1	3.84	Not significant
4	Type of family	0.74	1	3.84	Not significant
5	Area of residence	1.09	1	3.84	Not significant
6	Reason of stay in old age home	0.0024	1	3.84	Not significant
7	Educational status	1.42	1	3.84	Not significant

(P value <0.05)
Table 4: Association between pre-test SS of the senior citizens residing in the selected old age home with their demographic variables (N=30) Table-4.

Chi-square was calculated to find out the association between the pre-test SS of the senior citizens with their selected demographic variables before administration of PMRT revels that no significant association were found between pre-test SS when compared to demographic variables. Hence it can be interpreted that the difference in mean score related to their demographic variables were not true difference and only by chance. So, the null hypothesis was accepted.

Discussion

Highest percentage (43.33%) of the senior citizens were in the age group 71 years & above ,most of the respondents that is 86.67 percentage were female and majority of the senior citizens (67.7%) were alone and resided in the old age home due to death of spouse. Majority (63.33 %) belong to nuclear family, (60.0 %) of senior citizens were from rural area and all were Hindu. The study also shows that (60%) had no formal education, (90. %) of respondents are having habit of taking tea/coffee , most of the sample that is 80 percentage gained previous source of information regarding stress management from family and friends and all most all that is (90.%) of geriatric are having joint pain. Comparison of mean, S.D , mean percentage of post-test stress level of scores of senior citizens residing in the old age home shows that , during post-test highest mean percentage was reduced to (49.17%) which was (74.17%) obtained by senior citizens with severe level of stress and lowest mean percentage was reduced to (12.5%) which was(30%) obtained by senior citizens with mild level of stress .Then in the moderate stress level the mean percentage score during post –test was reduced to (26.67%) which was (55.12) during pre-test. PMRT was most effective (44.17 %) reducing the stress symptom headache and least effective (15.83%) on reducing the stress symptom bouts of anger in samples. The item wise analysis shows that the effectiveness of PMRT ranges from (44.17%) to(15.83%) in reducing stress among senior citizens. Highly significant difference were found in moderate and severe level of stress, while significant difference were found in mild level of stress.(P<0.01). No significant association were found between pre-test Stress score when compared to age, sex, marital status, type of family, area of residence, religion, reason of stay in old age home, educational status, habit , previous source of information regarding stress management and any specific disease condition.(P<0.05) [2]. The limitation of the study was it was carried out among a small population. The novelty of the present study is it was conducted among the geriatric population. In the present study the authors have no conflict of interest [3-7].

Conclusion

Senior citizens are the vulnerable section of society [8]. They undergo various physical, psychosocial changes during this period, which make them prone to various stressors and stress related disorder. They can switch up to some better stress management techniques which ultimately improve their quality of life. Researcher recognizes senior citizens are exposed to high level of stressful conditions due to loss of spouse, job, independency due to physical illness, and neglect by family members, etc. [9,10].

Nurses have an important role of creating awareness about complementary therapy, if the elderly are given proper guidance regarding complementary measure such as PMR, we can make a significant impact in their lifestyle that will be helpful in Practice of PMR is an effective and feasible method to decrease the stress.

References

1. Shederr BP, Yasheen KS (2013) A Concise text book of Advance Nursing Practice. In: 1st (Edn.), Banglore Emmess Medical Publishers, pp: 625-629.

2. Jose RD, Almeida V (2013) Effectiveness of jacobson's progressive muscle relaxation (JPMR) on blood pressure and health related stress level among patients with hypertension in a selected hospital of mangalore. International Journal of Nursing Education 5(2): 171-175.

3. Abolfotouh MA, Daffallah AA, Khan MY, Khattab MS, Abdulmoneim I (2001) Psychosocial assessment of geriatric subjects in Abha City, Saudi Arabia. East Mediterr Health J 7 (3): 481-491.

4. Kumutha V, Aruna S. Poongodi R (2014) Effectiveness of progressive muscle relaxation technique on stress and blood pressure among elderly with hypertension. IOSR Journal of Nursing and Health Science (IOSR-JNHS) 3(4): 1-6.

5. Lalitha K (2007) Mental health and psychiatric Nursing; An Indian Perspectives. VMG Book House Bangalore pp: 16.

6. Polit DF, Beck CT (2004) Nursing research: Principles and methods. Lippincott Williams & Wilkins.

7. Sreevani R (2007) A guide to mental health and psychiatric nursing. In: 4th (Ed.), Jaypee Brothers Publishers, pp: 518.

8. (2013) Common diseases in old age.

9. Kumutha V, Aruna S, Poongodi R (2014) Experimental study on Effectiveness of PMRT on reduction of stress and B.P. 3(4).

10. (2012) Stress-management-doing-progressive-muscle relaxation Assessed.

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