

Original Research Article

## **Effectiveness of TIPER (Tailor Made Interventional Package to Enhance Relaxation) on Stress, Depression and Anxiety among Elders - A Pilot Study**

P. Prakash<sup>1</sup>, Dr. Nappinai Seran<sup>2</sup>, Dr. Navaneetha<sup>3</sup>, Dr. Malarvizhi<sup>4</sup>, Dr. Pradeep Thilakan<sup>5</sup>

<sup>1</sup>Ph.D Scholar (Part time), Meenakshi University(MAHER), Chennai & Nursing Lecturer at Pondicherry Institute of Medical Sciences, Puducherry, India.

<sup>2</sup>Clinical Psychologist, Meenakshi University & Hospital, Chennai.

<sup>3</sup>Professor, College of Nursing, <sup>4</sup>Asst. Registrar, College of Nursing, <sup>5</sup>Professor cum HOD of Psychiatry dept., Pondicherry Institute of Medical Sciences, Puducherry, India.

Corresponding Author: P. Prakash

### **ABSTRACT**

A Quasi-experimental study was done in Puspa Gandhi Home for Aged & Anbagam Old age home, Puducherry Preliminary screening was done with DASS-21 (Depression Anxiety and Stress Scale) to all the elders who met the Sampling criteria. Categorized the level of depression, anxiety and stress as normal/mild/moderate/severe/extremely severe with DASS-21 & ICD-10 criteria with the guidance of Psychiatrist. Old age homes was randomly assigned (lottery method) into experimental and control groups. After the pretest, TIPER was administered to experimental group and physical exercises were given to the control group for 1 month period. Post test was done with DASS-21 and ICD-10 was done to identify the effectiveness. Results reveals that, t value of experimental group was 4.9935, 6.5666, 2.6788 for Depression, Anxiety and Stress respectively more than the table value said to be statistically significant at 0.01 level. 't' value of control group was 2.7530, 2.8620 3.3541 for Depression, Anxiety and Stress respectively less than the table value said to be not statistically significant at 0.01 level. Hence, TIPER is effective intervention in the reduction of Depression, Stress & Anxiety.

**Keywords:** Stress, Depression, Anxiety, Relaxation, elders, Old age Home.

### **INTRODUCTION**

As per WHO (2010) around 81 million were elders. The World population constitute 524 million people aged 65 years and above. The Indian Population is 1.039 billion. The Indian Census classifies people in the age range 60 years and above as "Old". The populations of those aged 60 years and above in India have increased from 24.71 million to 55.3 million. By the year 2020, life expectancy at birth in India will be as close to 70 years. <sup>(1)</sup>

The report on Global Burden of Disease estimates the point prevalence of unipolar depressive episodes to be 1.9% for men and 3.2% for women, and the one-year prevalence has been estimated to be 5.8% for men and 9.5% for women. It is estimated that by the year 2020 if current trends for demographic and epidemiological transition continue, the burden of depression will increase to 5.7% of the total burden of disease and it would be the second leading cause of disability-adjusted life years

(DALYs), second only to ischemic heart disease. <sup>(2)</sup>

Depression is associated with a constellation of psychological, behavioral and physical symptoms as well. Anxiety often occurs without conscious or apparent stimulus, which distinguishes it from fear. <sup>(2,3)</sup>

Tamil Nadu comprises of 10 % of elderly among the overall population. Among them, majority of them are female whose statistical data comprises of three quarters of the total elderly population living in Tamil Nadu .In India, about 4 million older people are reported to have psychological problems related to lack of family support, social support, physical disabilities, lack of income, dissatisfaction with their life achievements, changes in normal lifestyle and other social problems. <sup>(3)</sup>

An epidemiological study was conducted to compare the prevalence of depression among elderly living in institutional setting and residence. The sample size for the study was 2640 and they were selected through stratified random sampling technique. The participants were screened through geriatric mental state examination. The results found that the incidence of depression among the elderly living in institution was 27 % and in home it was 9.3 %. <sup>(4)</sup>

Most elders commonly suffer from depression and dementia. These psychological dysfunction might occur due to long standing stress that affects elders. The level of Stress, Depression and Anxiety was more among the elders and those can be reduced with a relaxation package to the elders. <sup>(8)</sup>

## **MATERIALS & METHODS**

**RESEARCH APPROACH:** Evaluative approach

**RESEARCH DESIGN:** Randomized control design.

**STUDY SETTING:** Puspa Gandhi Home for Aged & Anbagam Old age home, Puducherry

## **POPULATION:**

- Target Population - Elders 60 years of age and above.
- Accessible Population – Elders residing at Puspa Gandhi Home for Aged & Anbagam Old age home, Puducherry.

## **SAMPLING TECHNIQUE:**

- Total Enumerative Sampling technique to select samples
- Simple random sampling technique for allocation into experimental and control group.

**SAMPLE SIZE:** Total samples in two Old age homes were 45. As per Sampling criteria, Old age homes were randomized into experimental group (12 samples) in Puspa Gandhi Home for Aged & control group (10 samples) in Anbagam Old age home, Puducherry.

## **SAMPLING CRITERIA:**

### **A) INCLUSION CRITERIA:**

1. Elders who were 60 years and above.
2. Both male and female elders.
3. Elders who were willing to participate in the study.

### **B) EXCLUSION CRITERIA:**

1. Elders who have complete sensory impairments (Hearing and visual defects)
2. Elders who have very severe depression as per DASS-21 scale.
3. Elders who have panic anxiety as per ICD-10 criteria.
4. Elders who have cognitive impairment  $\leq$  17 as per MMSE score.
5. Elders who have complications of diabetes mellitus such as retinopathy, nephropathy and neuropathy.
6. Elders who have any neurological dysfunctions such as severe meningitis, uncontrolled convulsions, Brain neoplasm, paralysis and multiple sclerosis
7. Elders who were on psychiatric medications.
8. Elders who have recent cardiac diseases and malignant hypertension.

9. Elders who are under influence or treatment or withdrawal state of substance abuse.
10. Elders who were practicing yoga presently.

### **INTERVENTION – TIPER AND PHYSICAL EXERCISES**

It refers to Tailor made Interventional Package to Enhance Relaxation i.e. framed relaxation techniques from Jacobson progressive muscle relaxation, Guided imagery and Breathing Mindfulness meditation

#### **BEFORE THE INTERVENTION**

- Maintain the good IPR with elders residing at old age home
- Make the elders as maximum of 10 members to be gathered for a single session to be seated in a calm hall
- Instruct the elders to empty the bowel and bladder and be relaxed
- Instruct them to remove the constructing things like ring, watches, slippers etc.
- Wear loose and comfortable clothing.
- Sit in the chair in erect position

#### **INTERVENTION PLAN**

- Intervention has been planned for 25 minutes to the elders in evening timings at old age home

#### **SEQUENCE AND DURATION OF INTERVENTION-TIPER**

- Progressive muscle relaxation therapy for 15 minutes
- Guided imagery for 5 minutes
- Breathing Mindfulness meditation for 5 minutes.

#### **TOOL USED IN THIS STUDY:**

##### **PART – I**

Section A: Socio-Demographic Variables  
Section B: Modified Kuppaswamy Socio-Economic Scale  
Section C: Mini Mental Status Examination

##### **PART – II**

Section A: Depression Anxiety stress Scale (DASS-21)

Section B: State and Trait Anxiety Inventory

Section C: ICD-10 criteria's (Medical examination)

#### **PILOT STUDY**

The Pilot study was conducted in order find feasibility of entire research project. Researcher approached Puspa Gandhi Home for Aged & Anbagam Old age home, Puducherry on 1.11.2016 for data collection. Interpersonal relation were maintained with the elders in the Old age home. Old age homes were randomized using lottery method as Puspa Gandhi Home for Aged for experimental group and Anbagam Old age home as control group. Preliminary Screening was done with Minimal status examination, <sup>(7)</sup> DASS-21 (Depression Anxiety and Stress Scale), Trait and State anxiety inventory and ICD-10. 45 samples in both old age homes were assessed and out of which 22 samples were recruited for the study (12 samples in experimental group and 10 samples in control group) based on sampling criteria. TIPER was administered to experimental group i.e., 12 elders residing at Puspa Gandhi Home for Aged and Physical exercises was given to the control group i.e. 10 elders residing at Anbagam Old age home for 1 month period. Post test was done on 1.12.2016 using DASS-21 (Depression Anxiety and Stress Scale) & ICD-10.

#### **STATISTICAL ANALYSIS:**

Data was analyzed using SPSS-16 to find the effectiveness of TIPER in experimental and routine care within the group by paired 't' test in table 6,7 and between the group by unpaired 't' test in table 4,5. Demographic variable of Elders in experimental and control group was done by frequency and percentage distribution. Chi-Square test was performed to test association of variables in [Table 8](#).

**Table 1 Distribution of socio-demographic variables after simple randomization sampling**

S. NO	Variables	Experimental Group (n=12)		Control Group (n=10)	
		No. of Participants	Percentage	No. of Participants	Percentage
1.	<b>Age in years</b>				
	a. 60 – 65 years	1	8.5%	3	30%
	b. 66-70 years	4	33%	3	30%
	c. 71-75 years	2	17%	2	20%
	d. > 75 years	5	41.5%	2	20%
2.	<b>Gender</b>	0	0%	3	30%
	a. Male				
	b. Female	12	100%	7	70%
3.	<b>Educational status</b>				
	a. Illiterate	5	41.5%	6	60%
	b. primary	6	50%	2	20%
	c. secondary	1	8.5%	2	20%
	d. higher secondary graduate	0	0%	0	
4.	<b>Religion</b>			6	
	a. Hindu	11	91.5%		60%
	b. Christian	1	8.5%	4	40%
	c. Muslim	0	0%	0	0%
5.	<b>Previous occupation</b>				
	a. Government	0	0%	1	10%
	b. House wife	11	91.5%	9	90%
	c. Private	1	8.5%	0	0%
	d. Self employee	0	0%	0	0%
8.	<b>Marital Status</b>				
	a. Married	0	0%	0	0%
	b. Single	0	0%	1	10%
	c. Widow	12	100%	9	90%
	d. Divorced	0	0%	0	0%
10.	<b>NO. of Son or Daughter in the family</b>				
	a. Nil	3	25%	1	10%
	b. One	1	8.5%	1	10%
	c. Two	1	8.5%	5	50%
	d. More than two	7	58%	3	30%
11.	<b>Physical Illness (diagnosed)</b>				
	a. Yes	12	100%		100%
	b. No	0	0%	0	0%
12.	<b>Medications (If any)</b>				
	a. yes	12	100%	10	100%
	b. no		0%	0	0%
13.	<b>Reason for stay in Old age home</b>				
	a. Destitute	0	0%	0	0%
	b. Low socio-economic status	0	0%	0	0%
	c. Daughter/Son compulsion	8	67%	8	80%
	d. Self-wish	4	33%	8	80%
	e. Any others	0	0%	0	0%
14.	<b>Duration of Stay in Old age home</b>				
	a. < 1 year	4	33%	4	40%
	b. 1-5 years	8	67%	5	50%
	c. 6-10 years	0	0%	1	10%
	d. >10 years	0	0%	-	-
15.	<b>Availing any Old age benefits/Pension:</b>				
	a. Yes	8	67%	7	70%
	b. No	4	33%	3	30%
16.	<b>Visit by Family Members:</b>				
	a. Yes	8	67%	6	60%
	b. No	4	33%	4	40%

**Table 2 - Assessment of anxiety with state trait anxiety inventory before intervention**

S. NO	Level of Anxiety	STATE ANXIETY				TRAIT ANXIETY			
		Experimental Group (n=12)		Control Group (n=10)		Experimental Group (n=12)		Control Group (n=10)	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%
1.	Greater Anxiety	7	58%	6	60%	2	17%	1	10%
2.	Lesser Anxiety	5	42%	4	40%	10	83%	9	90%

**Table 3 - Assessment of anxiety with state trait anxiety inventory after intervention**

S. NO	Level of Anxiety	STATE ANXIETY				TRAIT ANXIETY			
		Experimental Group (n=12)		Control Group (n=10)		Experimental Group (n=12)		Control Group (n=10)	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%
1.	Greater Anxiety	10	58%	5	50%	2	17%	0	0%
2.	Lesser Anxiety	2	42%	5	50%	10	83%	10	100%

**Table 4 - Analysis of pre-test scores between experimental and control group using unpaired 't' test**

Dependant Variable	Statistics	Experimental	Control group	Mean Difference	df	't' value
Depression	Mean	7.75	8.10	0.35	20	0.3829
	SD	2.22	2.02			
Anxiety	Mean	5.42	5.60	0.18	20	0.2622
	SD	1.83	1.35			
Stress	Mean	8.67	7.80	0.87	20	0.8951
	SD	2.46	1.99			

**TABLE 5 - Analysis of post-test scores between the experimental and control group using unpaired 't' test**

Dependant Variable	Statistics	Experimental	Control group	Mean Difference	df	't' value
Depression	Mean	5.53	7.30	1.97	20	2.2311**
	SD	2.02	2.11			
Anxiety	Mean	3.08	4.70	1.62	20	2.1980**
	SD	1.93	1.42			
Stress	Mean	7.25	6.80	0.45	20	0.4063
	SD	2.60	2.57			

\*\*'t' value is statistically significant.

**Table 6 - Analysis of data in the Experimental group using paired 't' test (n = 12)**

Dependant Variable	Experimental group	Pre-test	Post test	Mean Difference	df	't' value
Depression	Mean	7.75	5.53	2.42	11	4.9935 **
	SD	2.22	2.02			
Anxiety	Mean	5.42	3.08	2.33	11	6.5666**
	SD	1.83	1.93			
Stress	Mean	8.67	7.25	1.42	11	2.6788**
	SD	2.46	2.60			

\*\*'t' value is statistically significant.

**Table 7 - Analysis of data in the Control group using paired 't' test (n = 10)**

Dependant Variable	Control group	Pre-test	Post test	Mean Difference	df	't' value
Depression	Mean	8.10	7.30	0.80	9	2.7530
	SD	2.02	2.11			
Anxiety	Mean	5.60	4.70	0.90	9	2.8620
	SD	1.35	1.42			
Stress	Mean	7.80	6.80	1.00	9	3.3541
	SD	1.99	2.57			

**Table 8 - Association of Demographic variables with Depression, Anxiety and Stress score**

S.NO	VARIABLES	DEPRESSION		ANXIETY		STRESS	
		Chi Square	P Value	Chi Square	P Value	Chi Square	P Value
1.	Age	31.5	0.682	36	0.208	34.5	0.261
2.	Religion	5.455	0.487	5.455	0.363	12	0.035
3.	Education	17.4	0.831	24.333	0.228	20.600	0.42
4.	Occupation	3.273	0.774	12	0.35	3.273	0.658
5.	No. of son/daughter	40.833	0.266	28.333	0.553	35.833	0.214
6.	Medication	12	0.062	5.455	0.363	5.455	0.363
7.	Reason for stay in old age home	6.75	0.345	6.75	0.24	9	0.109
8.	Duration	66	0.277	60	0.157	52	0.396
9.	Old age Benefits/Pension	7.5	0.277	6.75	0.24	9	0.109
10.	Visit by Family Members	2.250	0.895	4.5	0.480	6.75	0.24

## DISCUSSION

Foteini Papageorgiou, Liza Varvogli, Theodora Oikonomidi, George Chrousos and Christina Darviri(2016) conducted a study on stress management & lifestyle change intervention for women older than 60 years 6intervention plan was for 8 week which includes progressive muscle relaxation, guided imagery, abdominal breathing training with use of biofeedback, physical activity, nutritional

counseling, and cognitive restructuring training <sup>(6)</sup> where as in this study TIPER (Tailor Made Interventional Package to Enhance Relaxation) such as Progressive muscle relaxation therapy for 15 minutes, Guided imagery for 5 minutes, Breathing Mindfulness meditation for 5 minutes for 1 month duration is administered to the elders who are having depression, anxiety and stress in Puspa Gandhi Home for Aged & Anbagam Old age home, Puducherry.



Results explores 't' value of experimental group was 4.9935, 6.5666, 2.6788 for Depression, Anxiety and Stress respectively more than the table value said to be statistically significant at 0.01 level. 't' value of control group was 2.7530, 2.8620 3.3541 for Depression, Anxiety and Stress respectively less than the table value said to be not statistically significant at 0.01 level where as in the study conducted by Foteini Papageorgiou, Liza Varvogli, Theodora Oikonomidi, George Chrousos and Christina Darviri (2016) explores intervention group explores that the greater reduction in perceived stress ( $p < 0.001$ ,  $r = 0.8$ ) and symptoms of psychological stress ( $p < 0.001$ ,  $r = 0.7$ ) when compared to control group. The intervention also significantly decreased depressive symptoms and improvement in the quality of life value for  $p < 0.001$ ,  $r = 0.7$  for both variables. <sup>(6)</sup>

Kumutha, Dr. Aruna S, Poonkodi (2014) conducted a study on JPMR on stress and blood pressure among elders with hypertension. 60 elders with hypertension recruited for study. Sphygmomanometer and perceived stress scale was used as tool. JPMR was administered for 20 minutes for 21 days. Results reveals that posttests as viewed with the pretest score of the study group at  $P < 0.001$ . The outcome showed substantial variations in the study group which when compared with the control group at  $p < 0.001$  on stress, systolic blood pressure and  $p < 0.05$  on diastolic blood pressure. <sup>(9)</sup> In this study has been conducted with the elders residing in old age home where the study variables are stress, anxiety and depression. Tools used are Depression Anxiety Stress scale, Trait anxiety scale, State Anxiety scale for assessment. Intervention is a combination package of JPMR, guided imagery and mindfulness meditation and the control group also on range of motion exercises to counteract placebo effect in order to avoid research bias. Results reveal that TIPER found effective in decreasing stress, anxiety and depression.

## **FINDINGS OF THE STUDY:**

Results shows that, t value of experimental group was 4.9935, 6.5666, 2.6788 for Depression, Anxiety and Stress respectively which is more than the table value and said to be statistically significant at 0.01 level. 't' value of control group was 2.7530, 2.8620 3.3541 for Depression, Anxiety and Stress respectively less than the table value said to be not statistically significant at 0.01 level.

## **CONCLUSION**

Hence, Tailor Made Interventional Package to Enhance Relaxation (TIPER) is effective intervention in the reduction of Depression, Stress & Anxiety among the elders residing in Old age home.

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How to cite this article: Prakash P, Seran N, Navaneetha et al. Effectiveness of TIPER (tailor made interventional package to enhance relaxation) on stress, depression and anxiety among elders - a pilot study. Int J Health Sci Res. 2018; 8(3):186-192.

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