

EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION AND GUIDED IMAGERY ON STRESS DEPRESSION AND ANXIETY AMONG ELDERLY IN SELECTED OLD AGE HOMES AT KANYAKUMARI DISTRICT, TAMIL NADU

Dr. S. Sheeja ¹ and Dr. Annie Chandra S. ²

¹ Principal, Bethelam College of Nursing.

² Dean, Faculty of Nursing, Integral University.

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Abstract

Depression is one of the most common psychological conditions during the normal course of life with so much of losses and disappointments. The American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) defines late-life depression as depressive symptoms in adults older than 65 years of age. They have also viewed that depression in later life has serious consequences including increased health costs, distress to caregivers, amplified disabilities, increased morbidity, and suicide. The present study aims to assess the effectiveness of progressive muscle relaxation and guided imagery on stress, depression, and anxiety among the elderly in selected old age homes in Kanyakumari district. The conceptual framework of the study was based on Roy's adaptation model. The research approach used was quantitative and the research design was a quasi-experimental design with a non-equivalent control group. The dependent variables were stress, anxiety, and depression associated with the elderly and the independent variables were progressive muscle relaxation and guided imagery. The study was conducted in two selected old-age homes. A total of two hundred elderly (100 for each Group I and Group II) were chosen for this study. Data were collected using a self-administered questionnaire on Demographic variables and the Daily Record of Symptoms scale. Data analysis showed that after the intervention the mean knowledge score increased from 49.8 ± 8.4 to 78.8 ± 8.5 . Regarding the manifestations associated with PMS in post-test I and II, no symptoms were seen among 70.6% and 73.6% of subjects, respectively, and none had moderate or severe symptoms in the intervention group. However, in the control group, 80.45 subjects had mild, 18.4% had moderate and 0.6% had severe symptoms. It can be concluded that the lifestyle modification technique is one of the easy, cost-effective, and simple non-pharmacological interventions to solve the problems of subjects with PMS.

Keywords: Geriatric Depression, Stress, Anxiety, Progressive Muscle Relaxation, Guided Imagery.

INTRODUCTION

World Health Organization (WHO) determines elderliness as the reduction in the competency to accommodate environmental factors and accepts 65 years of age as the lower elderliness limit though they accept it as 60 in some conditions. According to **Kaplan and Shaddock**, 15 to 20% of the old population may experience depression. Depression in old age is quite complex and it is difficult to diagnose due to medical illnesses, dementia syndromes, and the heterogeneity of patients in the population. The current prevalence for all types of anxiety disorder was found to be 17.1% overall and the lifetime prevalence was found to be 18.6%. The current prevalence rates for particular disorders were found to be 6.9% for generalized anxiety disorder (GAD).

Globally, the proportion of the population with depression is estimated to be 4.4%. It is more common among females (5.1% vs 3.6%) with a peak in the 55–74-year age group in both sexes. Among the WHO regions, the prevalence varies from as low as 2.6% among males in the western Pacific region to 5.9% among females in the African region

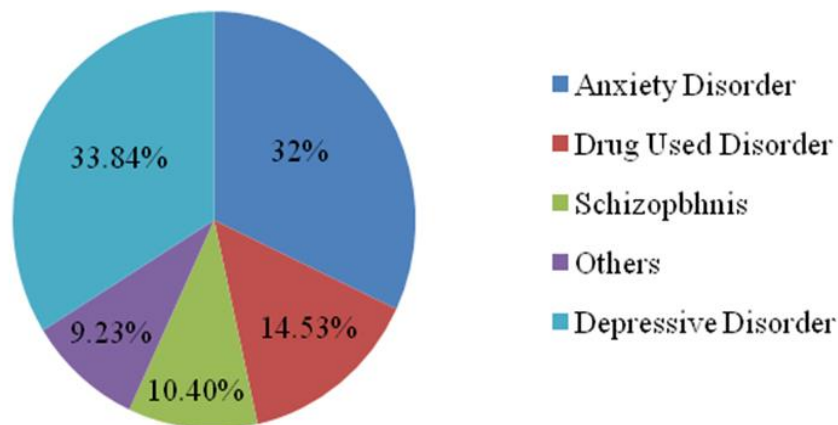


Fig 1.1: DALYs Disability-adjusted life years due to Mental and Substance abuse

Statement of the study

A quasi-experimental study to assess the effectiveness of progressive muscle relaxation and guided imagery on stress depression and anxiety among elderly in selected old age homes at Kanyakumari District, Tamil Nadu.

Objectives of the study To assess the level of stress, depression, and anxiety among the elderly before and after administration of progressive muscle relaxation in Group I.

- 1) To assess the level of stress, depression, and anxiety among the elderly before and after the administration of guided imagery in Group II.
- 2) To find out the effectiveness of progressive muscle relaxation on the reduction of stress, depression, and anxiety among the elderly in Group I.
- 3) To find out the effectiveness of Guided imagery on the reduction of stress, depression, and anxiety among the elderly in Group II.
- 4) To compare the level of stress, depression, and anxiety among the elderly in Group I and Group II
- 5) To find out the association between the level of stress, depression, and anxiety with selected demographic variables in Group I.
- 6) To find out the association between the level of stress, depression, and anxiety with selected demographic variables in Group II.

Hypotheses:

H₁: There will be a significant difference in the level of stress, anxiety, and depression among the elderly before and after the administration of progressive muscle relaxation and Guided imagery in Group I and Group II.

H₂: There will be a significant relationship between stress, anxiety, and depression among the elderly before and after the administration of progressive muscle relaxation and Guided imagery in Group I and Group II

H₃: There will be a significant association between pre-test levels of stress, anxiety, and depression, and demographic variables.

Variables of the study:

Independent variable - Progressive muscle relaxation for group.

Dependent variable -stress, anxiety, and depression of the elderly..

Delimitations

- The study was delimited to the elderly who are in Neyyoor old age home and Anpagam old age home.
- Data collection was delimited to the elderly who were willing to participate during the data collection
- The data collection period was limited to 1 year

Research Approach

A Quantitative approach

Research Design

Quasi-experimental non-equivalent control group design

Group	Pre-test	Intervention	Post-test
Group I	O ₁	X ₁	O ₂
Group II	O ₁	X ₂	O ₂

G - I - Experimental group

G - II - Control group.

O₁ - Pre-assessment of stress, depression, and anxiety among the elderly of groups

O₂ - Post assessment of stress, depression, and anxiety among elderly of Group

X₁ Intervention of progressive muscle relaxation

X₂ Intervention of Guided imagery

Demographic Variables:

Age, sex, religion, education, previous occupation, marital status, physical illness, no of children, reason for stay in old age home, duration of stay in old age home, availing any old age pension, visit by the family members and family support.

The setting of the study:

Selected old age homes in Kanyakumari District: theAnpagam old age home, Munchirai. It was governed by a charity organization.

Sample: The total number of inmates in the house was 120 elderly people.

Criteria for sample selection

Inclusion Criteria

Elderly who were

- the age group above 60 years
- both male and female
- living in an old age home
- willing to participate in the study

Exclusion Criteria

Elderly who were

- severely debilitated
- diagnosed with psychiatric disorders
- non-cooperative

Sampling Technique

Convenience sampling technique

Sample Size Calculation

The sample size was estimated by power analysis before the commencement of the study.

The power of the study will be 0.80. ($1-0.20 = 0.80$) or 80% and the effect size will be 0.5.

Sample Size

The sample consisted of 200 elderly people 100 for each Group I and Group II

Development and description of the tool

The following tools were used to generate the necessary data.

Part I: Demographic Data

Part II: DASS - 21

Part I

It deals with demographic data. An interview schedule was used to elicit the demographic variables of the elderly. The demographic variables were age, Sex, Religion, Education, Previous Occupation, Marital Status, Physical Illness, No Children, Reason for staying in old age home, Duration of stay in old age home, Availing any old age pension, Visit by the family members, Family support

Part II

It consisted of DASS 21 - In this scale three sub-scales of stress, Anxiety, and depression related questions were present. For each heading 8 questions were available. The score will range from 0, 1, 2, 3. 0- Never, 1 - sometimes, 2- often, and 4 - Almost Always.

Scoring and interpretation

Items	Subscale
1, 6, 8, 11, 12, 14, 18	Stress
2, 4, 7, 9, 15, 19, 20	Anxiety
3, 5, 10, 13, 16, 17, 21	Depression

Categories	Depression	Anxiety	Stress
Normal	0-4	0-3	0-7
Mild	5-6	4-5	8-9
Moderate	7-10	6-7	10-17
Severe	11-13	8-9	13-16
Extremely Severe	14+	10+	17+

Data Collection Procedure

The intervention for Group I (Experimental Group) consisted of progressive muscle relaxation and Group II guided imagery was carried out for six weeks by the investigator.

Step I (Before the intervention)

- Maintained good IPR with the elderly who were residing at the old age home
- Made the elderly as a maximum of 25 members to be gathered for a single session seated in a calm hall.
- Instructed the elderly to empty the bowel and bladder and be relaxed
- Instructed them to remove the construction materials like rings, watches slippers, etc.
- Made to wear loose and comfortable clothing
- Made to sit in the chair in an erect position.
- On the first day pre-interventional data were collected using demographic variables, and DASS -21

The intervention had been planned for 30 minutes for the elderly in the evening timings at the old age home.

Sequence and Duration of Intervention

- Progressive muscle relaxation therapy for 25 minutes
- Guided imagery for 5 minutes

Progressive Muscle Relaxation (Group I)

Progressive muscle relaxation refers to a tension-reducing technique that involves the systematic tension and relaxation of specific muscle groups, starting with the muscle in the forehead, the participants completely tense all muscles and hold the tension for 5 seconds, then repeat with the next body organs like eyes, nose, lips, cheeks, jaw, hands, forearms, upper arms, shoulders, back, stomach, hip, buttocks, thighs, feet, and toes.

Steps

- Made them to close their eyes and be quiet
- Assumed a passive attitude. Focus on themselves and on achieving relaxation in specific body muscles. Tune out all other thoughts.
- Tense and relax each muscle group as follows. Forehead, wrinkled forehead; try to make their eyebrows touch their hairlines for five seconds and relax.

• Eyes and Nose

Close their eyes as tightly as they can for five seconds and relax

• Lips, Cheeks and Jaw

Draw the centers of their mouth back, show a grimace for five seconds, and relax. Feel the warmth and calmness in their face.

- **Hands**

Extend their arms in front of them. Clench their fists tightly for five seconds and relax. Feel the warmth and calmness in their hands.

- **Forearms**

Extend their arms against an invisible wall, push forward with their hands for five seconds, and relax.

- **Upper arms**

Bend their elbows tense their biceps for five seconds and relax. Feel the tension leave their arms.

- **Shoulders**

Shrug their shoulders up to their ears for five seconds and relax.

- **Back**

Arch their back off the floor for five seconds and relax. Feel the anxiety and tension disappearing.

- **Stomach**

Tighten their stomach muscles for five seconds and relax.

- **Hips and buttocks**

Tighten their hip and buttock muscles for five seconds and relax.

- **Thighs**

Tighten their thigh muscles by pressing their legs together as tightly as you can for five seconds and relax.

- **Feet**

Bend your ankles towards their body as far as you can for five seconds and relax.

- **Toes**

Curl their toes as tightly as they can for five seconds and relax.

- Focus on any muscles that may still be tense. If any muscle remains tense, tighten and relax that specific muscle three or four times.

- Fix the feelings of relaxation in their mind and repeat the process.

Step III (Post-test Assessment)

After six weeks of intervention, a post-test was conducted with the same tool for Group I

Group II Guided imagery

Step I (Before the intervention)

- Maintained the IPR with the elderly in the old age home.
- Made the elderly as a maximum of 10 members to be gathered for a single session to be seated in a calm hall.
- Instructed the elderly to empty the bowel and bladder and be relaxed
- Made to sit in the chair in an erect position
- Pre-test was conducted using demographic data and DASS - 21 scale.

Step II

Imagine you walking along a peaceful road and the sun is warm on your back. The birds are singing, and the air is calm and fragrant. As you walk along your mind naturally wanders to the concerns and worries of the day.

Then, you come upon the side of the road you feel higher as you progress down the road. You find yourself in an overgrown garden. Flowers growing and soft green wild grasses are seen. Shade stress; breathe deeply, something the flowers. Listen to the birds and insects.

Feel the gentle breeze warm against your skin. All of your senses are alive and responding to pleasure in the peaceful time and place. You know that you can visit this special place whenever you wish to take some time to refresh yourself and renew your energy.

Step III

After six weeks of intervention, a post-test was conducted using the same tool for Group II

II content validity of the tool

The content validity of the tool was obtained from various experts in the fields of Nursing, Medicine, and psychology..

Reliability of the Tool

After the pilot study, the reliability of the tool was established by using Cronbach's alpha.

Sl. No	Tool	Reliability	r Value
1	Stress	Cronbach alpha	0.745
2	Anxiety	Cronbach alpha	0.805
3	Depression	Cronbach alpha	0.782

Ethical consideration:

The investigator had followed the ethical principles preceding the investigation. The investigator has adhered to the following actions to protect the ethical rights of the elderly.

- Formal approval was obtained from the institutional review board and institutional ethical committee.
- Official permission was obtained from the old age home of Anpagam and Neyyoor old age home
- Content validity was obtained from various experts from the fields of Nursing, Medicine, and Psychologist
- Both written and oral information about the study was given in the local language to the study participants. Separate informed consent forms were used for Group I and Group II
- A pilot study was executed to check the feasibility and time required.
- The elderly were reassured that collected information would be kept confidential.

Pilot Study

The pilot study was conducted to assess the feasibility and practicability of the study and also to determine the major flaws in the design. For the pilot study, 20 elderly who fulfilled the inclusion criteria were selected from Sahayapuram Old Age Home by random sampling technique. For Group I 10 elderly were administered progressive muscle relaxation and Group II was administered Guided imagery. Written informed consent was obtained from the study samples to participate in the study. Pre-test was done with demographics and DASS-21. The intervention progressive muscle relaxation and Guided imagery was given by the investigator for 6 weeks. For Group I and Group II. The findings of the pilot study revealed that it was feasible to conduct the main study in selected settings. There was no ambiguity in the tool and the tool was found feasible to proceed with the main study.

RESULT

Section I: Description of demographic variables among the elderly in Group I and Group II

Table 1.1: Frequency, percentage, and chi-square values of demographic variables of Group I and Group II among elderly

Sl. No	Demographic Variables	Components	Progressive Muscle Relaxation Group I		Guided Imagery Group II		χ^2	df	sig
			f	%	f	%			
1	Age (Years)	60 - 64	22	22.0	17	17.0	3.829	3	P> 0.05
		65 - 69	28	28.0	33	33.0			
		70 - 74	28	28.	36	36.0			
		75 - 79	22	22	14	14.0			
2	Sex	Male	45	45.0	39	39.0	0.739	1	P> 0.05
		Female	55	55.0	61	61.0			
3	Religion	Christian	42	42.0	61	61.0	8.499	2	p<0.05
		Hindu	49	49.0	36	36.0			
		Muslims	9	9.0	3	3.0			
4	Education	Primary	19	19.0	17	17.0	5.666	4	P> 0.05
		Middle	21	21.0	20	20.0			
		High	15	15.0	28	28.0			
		Graduate	21	21.0	14	14.0			
		Post Graduate	24	24.0	21	21.0			
5	Previous Occupation	Government	31	31.0	26	26.0	11.269	2	P< 0.01
		Private	35	35.0	18	18.0			
		Coolie	34	34.0	56	56.0			
6	Marital Status	Married	88	88.0	95	95.0	3.150	1	P> 0.05
		Unmarried	12	12.0	5	5.0			
7	Physical Illness	Diabetes and Hypertension	51	51.0	65	65.0	4.669	2	P>0.05
		Hyper Tension	25	25.0	21	21.0			
		Heart disease	24	24.0	14	14.0			
8	No of children	1 - 2	22	22.0	21	21.0	18.273	3	P<0.001
		3 - 4	27	27.0	53	53.0			
		5 - 6	27	27.0	18	18.0			
		above 6	24	24.0	8	8			
9	Reason for staying in	Took their own decision	21	21.0	23	23.0	8.423	3	P<0.05
		Family members took the decision	26	26.0	29	29.0			

Sl. No	Demographic Variables	Components	Progressive Muscle Relaxation Group I		Guided Imagery Group II		χ^2	df	sig
			f	%	f	%			
	old age home	Family disharmony	35	35.0	43	43.0			
		Inadequate accommodation to stay	18	18.0	5	5.0			
10	Duration of stay	1- 2 years	29	29.0	21	21.0	1.905	3	P>0.05
		3 - 4 years	39	39.0	41	41.0			
		5 - 6 years	21	21.0	26	26.0			
		Above 6 years	11	11.0	12	12.0			
11	Availing any old age pension	Yes	60	60.0	70	70.0	2.198	1	P>0.05
		No	40	40.0	30	30.0			
12	Visit by the family members	Yes	63	63.0	69	69.0	0.802	1	P>0.05
		No	27	27.0	31	31.0			
13	Family Support	Yes	58	58.0	58	58.0	0.000	1	P=1.00
		No	42	42.0	42	42.0			

Table 1.2: Mean, Standard deviation, and ‘t’ test value of stress, anxiety, and depression among the elderly in Group I and Group II

Variables	Group I		Group II		Mean difference	t' test value	df	Sig
	Progressive muscle relaxation		Guided imagery					
	Mean	SD	Mean	SD				
Stress	17.3	1.7	16.9	1.9	1.4	1.619	198	P>0.05
Anxiety	17.7	1.8	17.3	1.8	0.4	1.796	198	P>0.05
Depression	17.6	1.6	17.2	1.9	0.4	1.465	198	P>0.05

Section II: Pre and post-test assessment of stress, anxiety, and depression among the elderly in Group I

Level of Stress

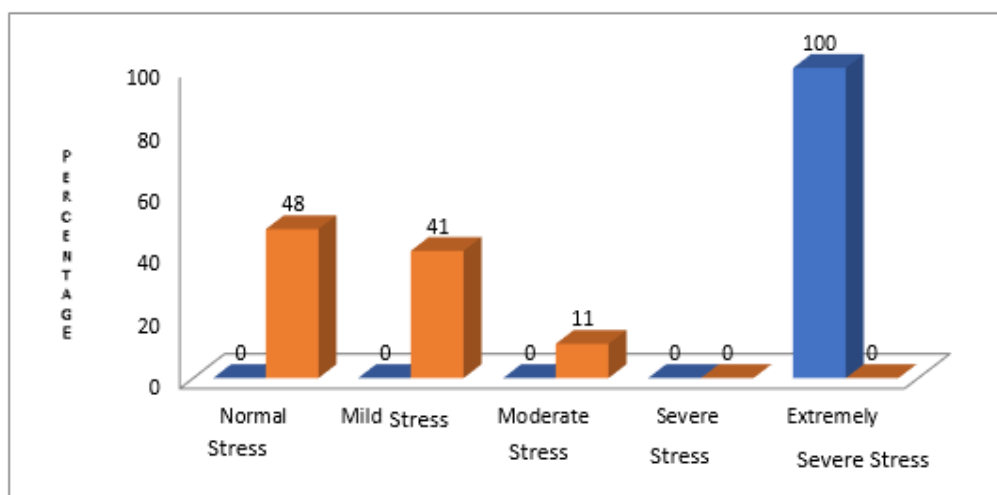


Fig 1.2: The Bar Diagram shows the percentage distribution of stress pre and post-test levels among the elderly in Group I

the pretest all the elderly (100%) in Group I had extremely severe stress, whereas in the post-test test, 48% had no stress (normal) 41% had mild stress 11% had moderate stress and none of them had severe and extremely severe stress

Level of Anxiety

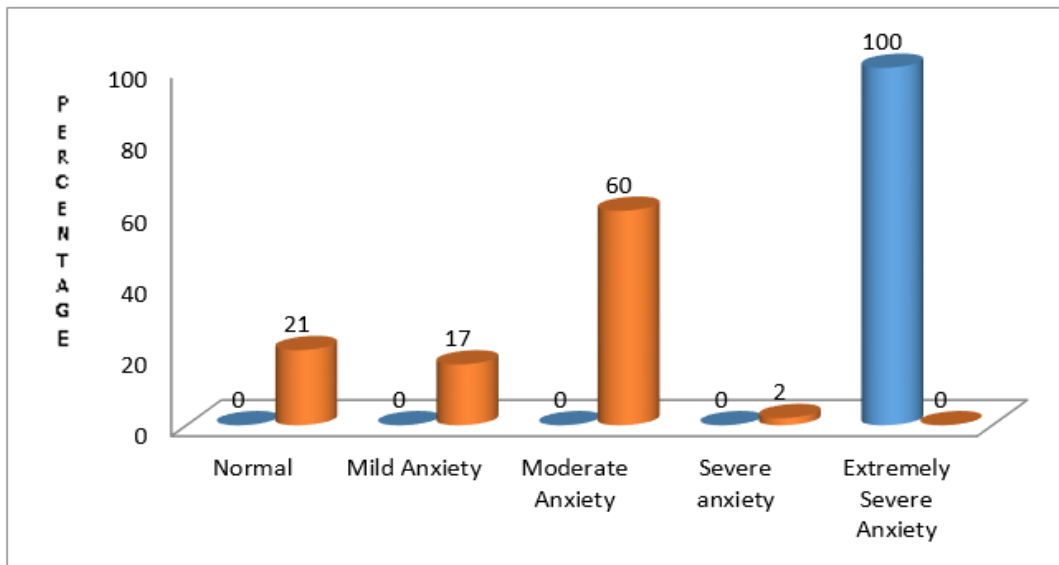


Fig 1.3: Cylindrical diagram shows the percentage distribution of pre and post-test levels of anxiety among the elderly in Group I. In the pretest all the elderly 100% had extremely severe anxiety whereas in the post-test test, 21% had moderate anxiety 2% had severe anxiety and none of them had extremely severe anxiety

Level of Depression

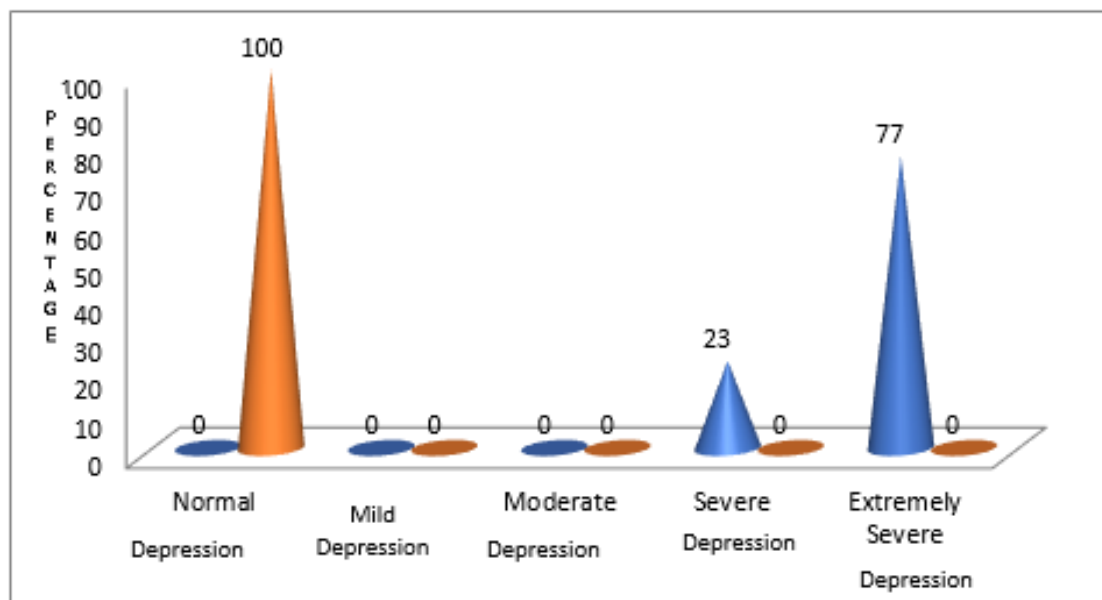


Fig 1.4: The vertical diagram shows the percentage distribution of pre and post-test levels of depression among the elderly in Group I

The pretest 77% elderly had extremely severe depression and 23% had severe depression whereas in the post-test test, all the elderly 100% had no anxiety and none of them had mild, moderate, severe extremely severe anxiety

Section III: Pre and post-test assessment of stress anxiety and depression among the elderly in Group II

Level of Stress

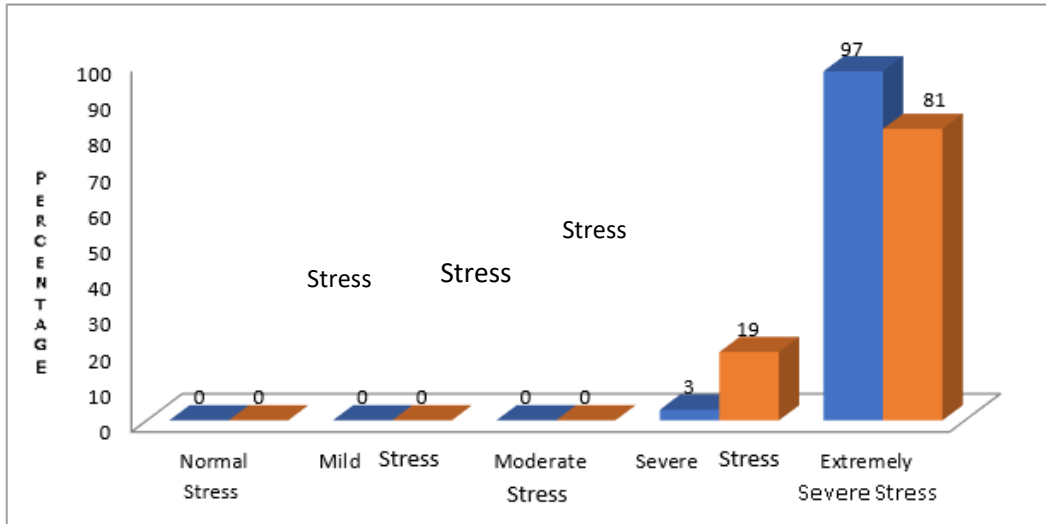


Fig 1.5: The bar diagram shows the percentage distribution of pre and post-test levels of stress among the elderly in Group II

In the pretest 97% of the elderly had extremely severe stress and in the post-test test 81% of the elderly had extremely severe stress and 19% had severe stress

Level of Anxiety

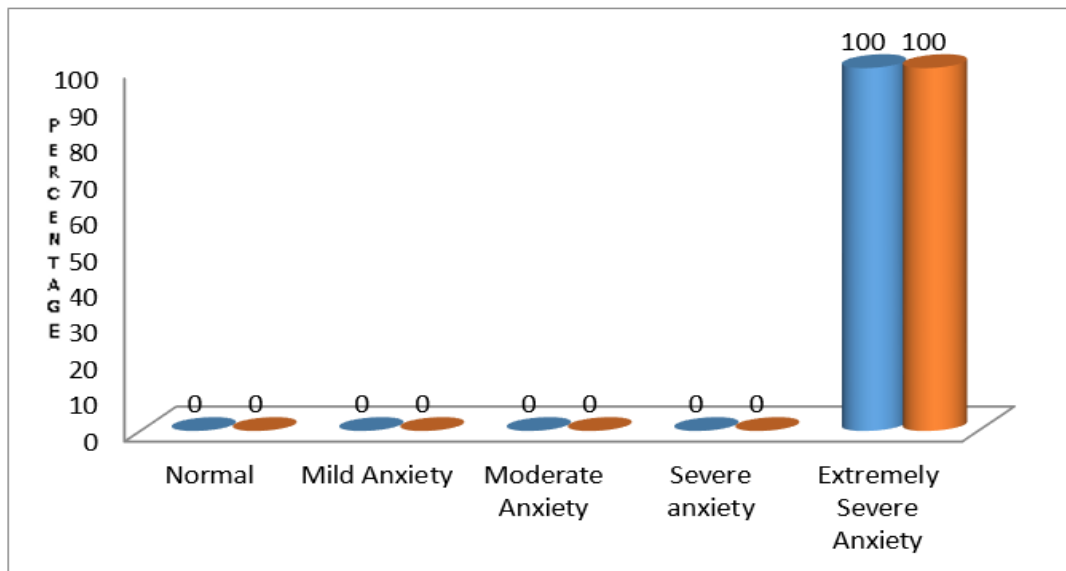


Fig 1.6: Cylindrical diagram shows the percentage distribution of pre and post-test levels of anxiety among the elderly in Group II

All the elderly had 100% in the pretest and post-test and extremely severe anxiety and none of them had mild-moderate severe anxiety

Level of Depression

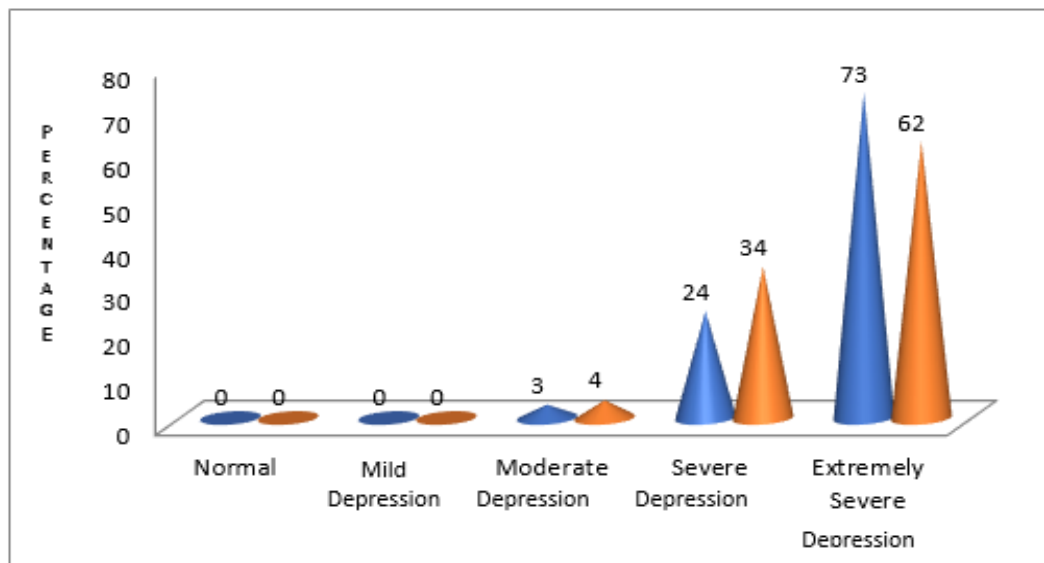


Fig 1.7: The vertical diagram shows the percentage distribution of pre and post-test levels of depression among the elderly in Group II

In the pretest 3% of the elderly had moderate depression 24% had severe depression and 73% had extremely severe depression. In the post-test ie after administration of Guided imagery, 4% of the elderly had moderate depression 34% had severe depression and 62% had extremely severe depression

Section IV: The Effectiveness of progressive muscle relaxation among the elderly in the reduction of Stress Anxiety and depression in Group I

Table 1.4: Mean standard deviation and 't' value of effectiveness of progressive muscle relaxation among elderly in reduction of stress anxiety and depression within the Group I

Variables	Pre-test		Post-test		Mean difference		t' test Value	df	Sig
	Mean	Sd	Mean	Sd	Mean	Sd			
Stress	17.3	1.7	4.8	1.5	12.5	2.1	58.923	99	P<0.001
Anxiety	17.7	1.8	4.8	1.5	12.9	2.4	52.520	99	P<0.001
Depression	17.6	1.6	4.5	1.3	13.1	1.9	67.744	99	P<0.001

Section V: Effectiveness of guided imagery among elderly in reduction of stress anxiety and depression in Group II

Table 1.5: Mean, standard deviation, and 't' value of effectiveness of Guided imagery among elderly by reduction of stress anxiety and depression within Group II

Variables	Pre-test		Post-test		Mean difference		t' test Value	df	Sig
	Mean	Sd	Mean	Sd	Mean	Sd			
stress	16.9	1.9	16.6	2	0.3	0.8	3.419	99	P<0.01
anxiety	17.3	1.8	17	1.9	0.3	0.9	3.129	99	P<0.01
Depression	17.2	1.9	16.8	2.3	0.4	1	3.965	99	P<0.01

The pretest means and standard deviation scores of stress anxiety and depression were 17.3 ± 1.7 , 17.7 ± 1.8 , and 17.6 ± 1.6 respectively. The same was after administration of progressive muscle relaxation therapy was 4.8 ± 1.5 , 4.8 ± 1.5 , and

4.5 ± 1.3 respectively. The mean difference of pretest to post-test scores of stress anxiety and depression were 12.5 ± 2.1, 12.9 ± 2.4 and 13.1 ± 1.9. The 't' test value of stress was t = 58.923, anxiety was t = 52.520 and depression was t = 67.744. The mean difference between the pretest and post-test scores was statistically highly significant at P < 0.001. Hence the intervention progressive muscle relaxation is very effective in reducing stress, anxiety, and depression.

Section VI: Comparison of level of stress anxiety and depression among elderly after administration of progressive muscle relaxation and Guided imagery in Group I and Group II

Table 1.6: comparisons of stress anxiety and depression between Group I and Group II

Variables	Pre-test		Post-test		Mean difference	t' test Value	df	Sig
	Mean	Sd	Mean	Sd				
Stress	12.5	2.1	0.3	0.8	12.2	54.326	198	P < 0.001
Anxiety	12.9	2.5	0.3	0.9	12.6	48.519	198	P < 0.001
Depression	12.8	2.1	0.2	2.6	12.6	37.432	198	P < 0.001

The above table 10 shows the effectiveness of Guided imagery on the reduction of stress anxiety and depression among elderly within the Group II. The pretest means and standard deviation scores of elderly stress, anxiety, and depression were 16.9 ± 1.9, 17.3 ± 1.8, and 17.2 ± 1.9 respectively whereas in the post-test mean and standard deviation scores of stress, anxiety, and depression were 16.6 ± 2.0, 17.0 ± 1.9 and 16.8 ± 2.3 respectively. The mean difference between pretest to post-test scores of stress anxiety and depression were 0.3 ± 0.9 and 0.4 ± 1.0. The 't' test scores of stress were t = 3.419, anxiety was t = 3.129 and depression was t = 3.965. The mean difference between pre-test and test scores was statistically highly significant at p < 0.01. Hence the intervention-guided imagery was less effective for the elderly in reducing stress anxiety and depression.

Section V: Association between demographic variables and pre-test level of stress anxiety and depression in Group I and Group II Table 4.12: Frequency, chi-square value of demographic variables, and pre-test level of Group I and Group II

Demographic Variable	Category	Group I progressive muscle relaxation			Group II Guided imagery		
		≤ Median	> Median	x ² , df sig	≤ Median	> Median	df sig
Age	60-64	11	11	x ² =2.597 df = 3 P > 0.05	12	5	x ² =3.324 df = 3 P > 0.05
	65-69	14	14		15	18	
	70-74	9	9		22	14	
	75-79	11	11		8	6	
Sex	Male	15	30	x ² =4.500 df = 1 P > 0.05	20	19	x ² =0.853 df = 1 P > 0.05
	Female	30	25		37	24	
Religion	Christian	21	21	x ² =0.772 df = 2 P > 0.05	36	25	x ² =0.817 df = 2 P > 0.05
	Hindu	20	29		20	16	
	Muslim	4	5		1	2	
Education	Primary	8	11	x ² =3.076 df = 4 P > 0.05	10	7	x ² =3.553 df = 4 P > 0.05
	Middle school	10	11		14	6	
	High school	5	10		15	13	
	Graduate	8	13		9	5	

Demographic Variable	Category	Group I progressive muscle relaxation			Group II Guided imagery		
		≤ Median	> Median	χ^2 ,df sig	≤ Median	> Median	df sig
	Post Graduate	14	10		9	12	
Previous Occupation	Government	13	18	$\chi^2=0.526$ df = 2 P>0.05	14	12	$\chi^2=0.781$ df = 2 P>0.05
	Private	15	20		9	9	
	Coolie	17	17		34	22	
Marital status	Married	41	47	$\chi^2=0.750$ df = 1 P>0.05	55	40	$\chi^2=0.621$ df = 1 P>0.05
	Unmarried	4	8		2	3	
Physical illness	Diabetes and hypertension	21	30	$\chi^2=2.278$ df = 2 P>0.05	38	27	$\chi^2=0.337$ df = 2 P>0.05
	Hyper tension	10	15		12	9	
	Heart disease	14	10		7	7	
No of children	1-2	1	8	$\chi^2=2.682$ df = 3 P>0.05	9	12	$\chi^2=3.518$ df = 3 P>0.05
	3-4	10	17		30	23	
	5-6	14	13		13	5	
	above 6	13	11		5	8	
Reason for staying in old age home	Took their own decision	13	8	$\chi^2=3.126$ df = 3 P>0.05	16	7	$\chi^2=2.327$ df = 3 P>0.05
	Family members look decision	11	15		16	13	
	Family disharmony	14	21		20	20	
	Inadequate accommodation to stay	7	11		3	3	
Duration of stay	1-2 years	16	13	$\chi^2=1.867$ df = 3 P>0.05	13	8	$\chi^2=0.334$ df = 3 P>0.05
	3-4 years	16	23		23	18	
	5-6 years	8	13		14	12	
	Above 6 years	5	6		7	5	
Availing any old age pension	Yes	27	33	$\chi^2=0.000$ df = 1 P=0.00	41	29	$\chi^2=0.235$ df = 1 P>0.05
	No	18	22		16	14	
Visit by the family members	Yes	29	34	$\chi^2=0.073$ df = 1 P=0.00	39	30	$\chi^2=0.021$ df = 1 P>0.05
	No	16	31		18	13	
Family support	Yes	30	28	$\chi^2=2.523$ df = 1 P=0.00	34	24	$\chi^2=0.148$ df = 1 P>0.05
	No	15	27		23	19	

The above table 12 shows that there was no association between the pre-test level of stress and demographic variables such as age ($\chi^2= 2.597,x.324$), sex ($\chi^2= 4.500,x.853$), religion ($\chi^2= 0.772,x.817$), education ($\chi^2= 3.076,x 3.553$), Previous occupation ($\chi^2=0.526,x 0.781$), marital status ($\chi^2=0.750,x 0.621$), physical illness ($\chi^2=2.278,x 0.337$), No of children ($\chi^2= 2.682,\chi^2= 3.518$), the reason for staying in an old age house ($\chi^2= 3.126,\chi^2= 2.327$), duration of stay ($\chi^2= 1.867,\chi^2= 0.334$), Availing old age pension ($\chi^2=0.000,\chi^2= 0.235$), a visit by the family members ($\chi^2= 0.073,\chi^2= 0.021$), family support ($\chi^2= 2.523,\chi^2= 0.148$) at $p>0.05$ level of significance in Group I and Group II

Table4.13: Frequency chi-square values of demographic variables and pretest level of anxiety in Group I and Group II

Demographic Variable	Category	Group I progressive muscle relaxation			Group II Guided imagery		
		≤ Median	> Median	χ^2 ,df sig	≤ Median	> Median	df sig
Age(years)	60-64	15	7	$\chi^2=2.277$ df = 3 P>0.05	8	9	$\chi^2=2.117$ df = 3 P>0.05
	65-69	17	11		20	13	
	70-74	15	13		16	20	
	75-79	16	6		8	6	
Sex	Male	25	20	$\chi^2=1.945$ df = 1 P>0.05	16	23	$\chi^2=3.085$ df = 1 P>0.05
	Female	38	17		36	25	
Religion	Christian	28	14	$\chi^2=0.522$ df = 2 P>0.05	32	29	$\chi^2=0.433$ df = 2 P>0.05
	Hindu	30	19		19	17	
	Muslim	5	4		1	2	
Education	Primary	12	7	$\chi^2=10.351$ df = 4 P>0.05	12	5	$\chi^2=7.391$ df = 4 P>0.05
	Middle school	14	7		8	12	
	High school	5	10		18	10	
	Graduate	12	9		5	9	
	postgraduate	20	4		9	12	
Previous occupation	Government	21	10	$\chi^2=0.456$ df = 2 P>0.05	10	16	$\chi^2=2.594$ df = 2 P>0.05
	Private	21	14		10	8	
	Coolie	21	13		32	24	
Marital status	Married	55	33	$\chi^2=0.079$ df = 1 P>0.05	51	44	$\chi^2=2.159$ df = 1 P>0.05
	Unmarried	8	4		1	4	
Physical illness	Diabetes and hyper tension	31	20	$\chi^2=0.257$ df = 2 P>0.05	37	28	$\chi^2=9.435$ df = 2 P>0.01
	Hyper tension	16	9		13	8	
	Heart disease	16	8		2	12	
No of children	1;2	11	11	$\chi^2=6.176$ df = 3 P>0.05	14	7	$\chi^2=3.518$ df = 3 P>0.05
	3;4	16	11		29	24	
	5;6	16	11		6	12	
	above 6	20	4		3	5	
Reason for stay in old age home	Took their own decision	14	7	$\chi^2=0.613$ df = 3 P>0.05	11	12	$\chi^2=5.404$ df = 3 P>0.05
	Family members took decision	17	9		20	9	
	Family disharmony	22	13		18	25	
	Inadequate accommodation to stay	10	8		3	2	
Duration of stay	1-2 years	20	9	$\chi^2=1.481$ df = 3 P>0.05	7	14	$\chi^2=5.556$ df = 3 P>0.05
	3-4 years	25	14		22	19	
	5-6 years	11	10		14	12	
	above 6 years	7	4		9	3	
Availing any old age pension	Yes	38	22	$\chi^2=0.007$ df = 1 P>0.000	41	29	$\chi^2=4.037$ df = 1 P>0.05
	No	25	15		11	19	
Visit by the family members	Yes	38	25	$\chi^2=0.526$ df = 1 P>0.000	37	32	$\chi^2=0.235$ df = 1 P>0.05
	No	25	12		15	16	
Family support	Yes	38	20	$\chi^2=0.375$ df = 1 P=1.00	34	24	$\chi^2=2.425$ df = 1 P>0.05
	No	25	17		18	24	

Table 13 shows that there was a significant association between the pretest level of anxiety and demographic variables such as education ($x^2= 10.351$) in Group I physical illness ($x^2=9.435$) and Availing old age pension ($x^2= 4.037$) in Group II and other variables such as age ($x^2= 2.277, x^2= 2.117$), sex ($x^2= 1.945, x^2= 3.085$), religion ($x^2= 0.522, x^2= 0.433$), previous occupation ($x^2= 0.456, x^2= 2.594$), marital status ($x^2= 0.079, x^2= 2.159$), no of children ($x^2=6.176, x^2= 3.518$), reason for stay in old age home ($x^2= 0.613, x^2= 5.404$), duration of stay ($x^2= 1.481, x^2= 5.556$), a visit by the family members ($x^2= 0.526, x^2= 0.235$), family support ($x^2= 0.375, x^2= 2.425$) at $p>0.05$ level of significant in Group I and Group II

Table 4.14: Frequency and chi-square value of demographic variables and pretest level of depression in Group I and Group II

Demographic Variable	Category	Group I progressive muscle relaxation			Group II Guided imagery		
		≤ Median	> Median	df sig	≤ Median	> Median	df sig
Age	60-64	10	12	$x^2=4.935$ df = 3 P>0.05	10	7	$x^2=1.051$ df = 3 P>0.05
	65-69	10	18		19	14	
	70-74	18	10		19	17	
	75-79	12	10		6	8	
Sex	Male	22	23	$x^2=0.040$ df = 1 P>0.05	22	17	$x^2=0.150$ df = 1 P>0.05
	Female	28	27		32	29	
Religion	Christian	21	21	$x^2=1.184$ df = 2 P>0.05	27	29	=7.209 df = 2 P>0.05
	Hindu	26	13		24	17	
	Muslim	3	6		3	0	
Education	Primary	9	10	$x^2=2.362$ df = 4 P>0.05	12	5	$x^2=10.442$ df = 4 P<0.05
	Middle school	11	10		7	13	
	High school	5	10		16	12	
	Graduate	12	9		11	3	
	Post Graduate	13	11		8	13	
Previous occupation	Government	17	14	$x^2=1.122$ df = 2 P>0.05	13	13	$x^2=2.934$ df = 2 P>0.05
	Private	15	20		13	5	
	Coolie	18	16		28	28	
Marital status	Married	43	45	$x^2=0.379$ df = 1 P>0.05	51	44	$x^2=2.159$ df = 1 P>0.05
	Unmarried	7	5		3	2	
Physical illness	Diabetes and hyper tension	25	26	$x^2=5.926$ df = 2 P>0.05	37	28	$x^2=2.958$ df = 2 P>0.01
	Hypertension	17	8		8	13	
	Heart disease	8	16		9	5	
No of children	1;2	13	9	$x^2=4.968$ df = 3 P>0.05	8	13	$x^2=2.819$ df = 3 P>0.05
	3;4	11	16		31	22	
	5;6	17	10		10	8	
	above 6	9	5		5	3	
Reason for staying in old age home	Took their own decision	8	12	$x^2=1.062$ df = 3 P>0.05	10	13	$x^2=3.941$ df = 3 P>0.05
	Family members took decision	14	12		14	15	
	Family disharmony	19	16		28	15	
	Inadequate accommodation to stay	8	10		2	3	
	1-2 years	10	19		14	7	

Demographic Variable	Category	Group I progressive muscle relaxation			Group II Guided imagery		
		≤ Median	> Median	df sig	≤ Median	> Median	df sig
Duration of stay	3-4 years	23	16	$\chi^2=6.751$ df = 3 P>0.05	20	21	$\chi^2=2.684$ df = 3 P>0.05
	5-6 years	9	12		15	11	
	above 6 years	8	3		5	7	
Availing any old age pension	Yes	33	27	$\chi^2=1.500$ df = 1 P>0.00	37	33	$\chi^2=0.123$ df = 1 P>0.05
	No	17	23		17	13	
Visit by the family members	Yes	28	35	$\chi^2=2.102$ df = 1 P>0.00	35	34	$\chi^2=0.961$ df = 1 P>0.05
	No	22	15		19	12	
Family members	Yes	29	29	$\chi^2=0.000$ df = 1 P=1.00	32	26	$\chi^2=0.076$ df = 1 P>0.05
	No	21	21		22	20	

The above table 14 showed that there was a significant association between the pretest level of depression and demographic variables such as religion ($\chi^2= 7.209$) and Availing old age pension ($\chi^2= 0.123$) In Group II another variable such as age ($\chi^2= 4.935, \chi^2= 1.051$), sex ($\chi^2= 0.040, \chi^2= 0.150$), education ($\chi^2= 2.362, \chi^2= 10.442$), previous occupation ($\chi^2= 1.12, \chi^2= 2.934$), marital status ($\chi^2= 0.379, \chi^2= 2.159$), physical illness ($\chi^2= 5.926, \chi^2= 2.958$), No of children ($\chi^2= 4.968, \chi^2= 2.819$), the reason for staying in an old age home ($\chi^2= 1.062, \chi^2= 3.941$), deviation of stay ($\chi^2= 6.751, \chi^2= 2.684$), Availing old age pension ($\chi^2= 1.500, \chi^2= 0.123$), a visit by the family members ($\chi^2= 2.102, \chi^2= 0.961$) and family support ($\chi^2= 0.000, \chi^2= 0.076$) at $p>0.05$ level significant in Group I and Group II.

Nursing Implication:

- The nurse can provide progressive muscle relaxation and guided imagery in addition to other nursing interventions.
- Nurses can undergo training in progressive muscle relaxation and guided imagery that can be applied in clinical areas.
- Progressive muscle relaxation and guided imagery is a cost-effective treatment and easy to administer.
- Progressive muscle relaxation is a complementary and alternative therapy that has no side effects.
- Nurses can develop evidence-based practice on progressive muscle relaxation and guided imagery.
- Nurses can educate the benefits of progressive muscle relaxation and guided imagery to the elderly patients.

Nursing Education:

- Nurse educators can formulate educative material on progressive muscle relaxation and guided imagery and educate the nurses.
- The updated nursing curriculum should emphasize more on various complementary and alternative therapies and their advantages.

- In-service education and continuing nursing education may be organized periodically for nurses to update their knowledge and skills in various types of complementary and alternative therapy.
- Nurse educators can encourage nurses to practice progressive muscle relaxation and guided imagery in their area.
- Organize periodical short sessions to educate and train progressive muscle relaxation to nurses.

Nursing Administration:

- Nurse administrators must make necessary arrangements to implement progressive muscle relaxation as an effective method for the reduction of stress, anxiety, and depression.
- Nurse administrators need to facilitate the utilization of research-based nursing intervention on complementary and alternative therapy methods and formulate policies and necessary charges in the institution.

Nursing Research:

- A Similar study can be conducted in various settings.
- A similar study can be done with a large sample size which helps to generalize the findings.
- Further research can be conducted on assessing the attitude towards alternative complementary therapies among nurses.
- A study can be conducted to assess the association between quality of life and alternative complementary therapy.

Nursing Recommendation:

- A study can be carried out to evaluate the efficiency of various alternative therapies like music therapy, foot reflexology, etc.
- A study can be conducted to find out the knowledge of nurses regarding the importance of alternative complementary therapies.
- A similar study can be replicated on a large sample using non-probability sampling triangulation.
- A similar study can be conducted for patients who are residing at home in the community area.

CONCLUSION

The findings of the study showed that while comparing the level of stress, anxiety, and depression among the elderly in Group I (progressive muscle relaxation) and Group II (Guided imagery). In stress, the mean reduction of Group I was 12.9 ± 2.1 , and that of Group II was 0.3 ± 0.8 . In anxiety mean reduction of Group I was 12.9 ± 2.5 and that of Group II 0.3 ± 0.9 . In depression the mean reduction of Group I was 12.8 ± 2.1 and in Group II 0.2 ± 2.6 .

The mean reduction of Group I was more significant than that of Group II. It is evident from the study that the progressive muscle relaxation there was a significant reduction of stress, anxiety, and depression among the elderly in Group I than the guided imagery in Group II.

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