

**Original article**

## **Effectiveness of Jacobson Progressive Muscle Relaxation Technique on Depressive Symptoms and Quality of Life Enjoyment and Satisfaction in Community Dwelling Older Adults**

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### **Abstract**

**Introduction:** Depression in old age is an emerging public health problem leading to morbidity and disability worldwide. Many people experience depression in old age, either as a result of living alone or due to lack of close family ties and reduced connections with their culture of origin, worries about finances after retirement, the fear of institutionalization etc. which results in an inability to actively participate in the community activities. Relaxation can help to relieve the symptoms of stress. Although the cause of the anxiety will not disappear, but the person probably feels more able to deal with it once the tension in the body get released. **Methods:** An experimental study (Pre & Post) conducted on 30 subjects living in old age home in the age group 60-85 years. All the subjects were trained to perform Jacobson's Progressive Muscle Relaxation technique under the guidance of physiotherapist for one week and were encouraged to practice it once a day for 5-6 days a week without supervision. Subjects were monitored by weekly chart of performance of the technique until 12 weeks. The subjects were evaluated for geriatric depression by using Geriatric Depression Scale (GDS) and Quality of life enjoyment and satisfaction questionnaire (Q-OLES-Q-SF) at baseline and after twelve weeks. **Results:** This study demonstrated very statistically significant difference between pre and post GDS scores ( $p=0.005$ ,  $t=2.9709$ ,  $df=29$ ) which indicates that there is reduction of depressive symptoms in older adults. There is statistically significant difference in pre and post Q-OLES-Q SF scores ( $p=0.01$ ,  $t=2.5292$ ,  $df=29$ ) which indicates that there is improvement in quality of life enjoyment and satisfaction in older adults. **Conclusion:** Jacobson's Progressive Muscle Relaxation technique appears to reduce depressive symptoms and improve the Quality of Life Enjoyment and Satisfaction in older adults. Further studies are needed to overcome the limitation of this study design to confirm the benefits of JPMR technique.

**Key Words:** Jacobson Progressive relaxation technique, Q-OLES-Q, Geriatric Depression Scale.

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### **Introduction**

Depression in old age is an emerging public health problem leading to morbidity and disability worldwide.<sup>1</sup> According to WHO Depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness & poor concentration.<sup>2</sup> Depression is not a

natural part of aging. Depression is often reversible with prompt recognition and appropriate treatment. However, if left untreated, depression may result in the onset of physical, cognitive, functional, and social impairment, as well as decreased quality of life, delayed recovery from medical illness and surgery, increased health care utilization, and suicide<sup>1</sup>

Relaxation can help to relieve the symptoms of stress. Although the cause of the anxiety will not disappear, you will probably feel more able to deal with it once you have released the tension in your body and cleared your thoughts. Jacobson's progressive muscle relaxation (JPMR) technique involves contracting and relaxing the muscles to make you feel calmer.<sup>3</sup>

The Quality of life has been defined as the perception of the individual about one's position in life in the context of cultural and value systems in relation to one's objectives, beliefs, and expectations<sup>4</sup> The Quality of life enjoyment & satisfaction questionnaire (Q-OLES-Q) has been used to investigate different degrees of enjoyment and satisfaction that other instruments cannot detect easily<sup>4</sup>. The current study focuses on the effects of 12 weeks Jacobson progressive muscle relaxation technique as an intervention on depressive symptoms and quality of life enjoyment & satisfaction in community dwelling older adults.

**Aim:** To study the effectiveness of Jacobson Progressive muscle relaxation technique on depressive symptoms and quality of life enjoyment and satisfaction in community dwelling older adults.

#### **Materials and Methods**

An experimental (pre & post) study was carried out on 30 older adults (20 men & 10 women) living in old age home. The mean age of sample population was 72 years.

#### **Selection of Subjects:**

The subjects for the sample were selected from Matoshree Vrudhashram, Viladghat, Ahmednagar, Maharashtra. Inclusion criteria for selection of subjects were older individuals in the age group 60 to 85 years, both males & females, not to be taking drugs like Corticosteroids, Mini Mental State Examination<sup>5</sup> score > 24 not have endured an

extremely negative life event within the year and subjects having GDS score 5 to 8 i.e. Mild depression. Exclusion criteria were older adults who are not able to follow commands, subjects with severe hearing and visual impairment, suffering from chronic systemic illnesses such as cancer, stroke, Rheumatoid arthritis, Parkinsonism etc.

The subjects were assessed for geriatric depression by using Geriatric Depression Scale<sup>6</sup> (GDS) and Quality of life enjoyment & satisfaction questionnaire<sup>7</sup> (Q-OLES-Q-SF) at baseline and after 12 weeks.

#### **Procedure:**

Ethical clearance was obtained from Institutional Ethical Committee, PDVVPF's College of Physiotherapy, Ahmednagar. Initially the participants were personally contacted and rapport was established with them. The subjects were informed about the study, its benefits & risk in their local language and written informed consent was signed by them.

The audiovisual demonstration of Jacobson progressive muscle relaxation (JPMR) technique was shown to all the participants prior to the study. After that participants were trained to perform JPMR technique in small groups, under the guidance of physiotherapist for one week. Once the subjects become master in performing this JPMR technique, then they were asked to perform it individually; once in a day for 5-6 days a week.

All the participants were given weekly chart to monitor whether they are performing the technique or not. If they performed the JPMR technique then they were asked to mark (√), if they didn't then they were asked to mark (X) on the sheet provided to them. They were asked to mention the time of the JPMR technique performance as well. The Sheets were

collected from all the participants on every Friday for twelve weeks.

**Geriatric Depression Scale<sup>6</sup>**

A Short Form GDS consisting of 15 questions was developed in 1986. The Short Form is more easily used by physically ill and mildly to moderately demented patients who have short attention spans and/or feel easily fatigued. It takes about 5 to 7 minutes to complete. Scores of 0-4 are considered normal, depending on age, education, and complaints; 5-8 indicate mild depression; 9-11 indicate moderate depression; and 12-15 indicate severe depression.

**Quality Of Life Enjoyment & Satisfaction Scale (Q-OLES-Q)<sup>7</sup>**

The Q-LES-Q is a self-administered scale designed to measure the patient’s satisfaction and enjoyment of daily life.<sup>25</sup> In this scale physical health/activities, mood, work, social activities, household activities, leisure time, social relations, and general activities are included. The scoring of the Q-OLES-Q-SF involves summing only the first 14 items to yield a raw total score. The last two items are not included in the total score but are stand alone items. High scores on the Q-OLES-Q indicate greater satisfaction. The raw total score ranges from 14 to 70. The raw total score is transformed into a percentage maximum possible score using the following formula: (Raw score – 14/56).

**Results:**

**Table 1: Comparison of GDS & Q-OLES-Q- SF pre & post intervention**

Variables	Pre score with SD	Post score with SD	t- value	P value	Statistical significance
GDS SF	6.8 (1.15)	6.4 ( 1.16)	2.97**	0.005	very significant
Q-OLES-Q SF	44.6 (10.20)	45.6 (9.20)	2.52*	0.01	Significant

p< 0.05 \* Significant, p< 0.01 \*\* Very significant

**Table no. 2 –Comparison of individual demographic variables of Q-OLES-SF pre and post Intervention**

Variables	Pre Score With SD	Post Score With SD	t- Value	P- Value	Statistically Significance
Physical Health	2.83(0.75)	3.03(0.67)	2.69*	0.01	Significant
Activities of daily Function	2.83( 0.65)	2.97(0.61)	2.11*	0.04	Significant
Household Activities	2.87(0.68)	3.07(0.58)	2.69*	0.01	Significant
Social Relationship	2.90(0.66)	3.10(0.61)	2.26*	0.03	Significant

p< 0.05 \* Significant.

Table no. 1 shows very statistically significant difference between pre and post GDS scores ( $p = 0.005$ ,  $t = 2.9709$ ,  $df = 29$ ) which indicates that there is reduction of depressive symptoms in older adults.

There is statistically significant difference in pre and post Q-OLES-Q SF scores ( $p = 0.01$ ,  $t = 2.5292$ ,  $df = 29$ ) which indicates that there is improvement in quality of life enjoyment and satisfaction among older adults living in old age home.

Table no. 2 shows statistically significant difference in individual variables of Q-OLES-Q SF such as Physical health, Activities of daily functions, Household activities, and Social relationships.

#### **Discussion:**

In this study we found very significant effect of JPMR technique on GDS scores in depressive older adults. Similar results were found by Palak Patel<sup>8</sup> in her study on effectiveness of JPMR therapy among staff nurses. She noticed significant difference in the level of stress before and after administering progressive muscle relaxation therapy among staff nurses working in selected hospitals at vadodara city. Uzma Ali & Shazia Hasan<sup>9</sup> found in their study that JPMR technique was very effective in the reduction of anxiety and depressive symptoms in older adults. It was further confirmed that patient felt improvement in their negative thinking that was related to feeling of inferiority which was dealt with cognitive restructuring as according to Beck (Sharf, 2000) feelings of inferiority and worthlessness is a core belief that lead to depression. Relaxation therapy is also useful in developing perception of home environment.

According to Jacobson (1941)<sup>10,11</sup>, complete muscle relaxation is incompatible with having any thoughts or feelings, the relationship of muscle tension,

relaxation and autonomic nervous system that reduction in skeletal muscle tone leads to loss of a ergotropic tone of a hypothalamus and diminution of hypothalamic discharges which consequently leads to dominance of trophotropic system, also called parasympathetic activation which include reductions in HR and BP, increased activity of the digestive system by which nutrition absorption increases, and muscle endurance increases. (Benson 1975)<sup>12</sup> Liza<sup>13</sup>(2011) reported that progressive muscular relaxation reduces stress response.

Result of our study indicate beneficial effect of 12 weeks Jacobson progressive muscle relaxation technique on physical health, psychological health, social relationships and environment domains of Q-OLES-Q- SF in older adults living in old age home. The new findings indicate that the deep relaxation, if practiced regularly, can strengthen the immune system and produce a host of other medically valuable physiological changes. The greatest reduction was found in blood pressure and heart rate in hypertensive patients. Long term benefits of PMR reported by Liza Varvogli et al<sup>13</sup>included: reduction of salivary cortisol levels and generalized anxiety, decreased blood pressure and heart rate, decreased headaches, better management of cardiac rehabilitation, improvement of quality of life of patients after bypass surgery, and improvement of quality of life of patients with multiple sclerosis.

This study shows significant improvement in Q-OLES-Q SF scale in most of the domain of quality of life. However, considering the limitations in the design of this study, the findings of the study needs to be considered as preliminary and there is a need for future studies with randomized control trials to further establish the efficacy of Jacobson's

Progressive Muscle Relaxation technique in community dwelling older adults.

### Conclusion

This study suggests potential benefits of Jacobson's Progressive Muscle Relaxation technique for reducing depressive symptoms and improving the Quality of Life Enjoyment and Satisfaction in older adults. When Progressive Muscle Relaxation is

practiced and incorporated to the individual's life style, it can help to neutralize some of the effects of stress reaction by releasing tension in the body.

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