International Journal of Innovative Research in Health Science

Published: April, 2026

Volume 2, Issue 4, Pages 21-24

Research Article

DOI: https://doi.org/10.63349/ijirhs.202620

A Study to assess the Effectiveness of Jacobson's Muscle relaxation Techniques at reducing anxiety and stress among the elderly residing at selected old age home in Krishnagiri District

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Abstract: Introduction: Aging, health conditions and social factors make the elderly population prone to anxiety and stress, which influence their overall health and the quality of life. **Aim:** To determine how well Jacobson Progressive Muscle Relaxation technique works in reducing anxiety and stress in the elderly. **Methodology:** A quasi-experimental design of pre-test and post-test was used to determine the quantitative methods. Purposive sampling was used to sample 60 aged participants who were allocated in experimental (n= 30) and control (n= 30) groups. The experimental group was administered PMR intervention and the control group was administered no intervention. The Geriatric Anxiety Scale and Perceived Stress Scale were used to collect data. **Result:** There was a significant decrease in the levels of anxiety and stress within the experimental group following the intervention ($p<0.05$), but within the control group no significant enhancement was observed. Comparison of the post-test results in the groups showed that there was a statistically significant difference which implies that PMR is effective. Most demographic variables did not have a significant association with outcomes. **Conclusion:** The Progressive Muscle Relaxation technique created by Jacobson is a powerful, safe and cost-effective way of alleviating stress and anxiety in the old-aged, enhancing their psychological health.

Keywords: Aging, muscle relaxation technique anxiety, stress.

INTRODUCTION

Old age (60 years and above) is a period when the elderly population experiences considerable physical, psychological, and social changes that make them more susceptible to health issues, such as anxiety and stress. Psychological distress is increased by factors like reduced health, lack of independence, social isolation, bereavement, among others. Such mental health problems may have adverse effects on health, causing a decline in cognitive performance, exacerbation of chronic diseases.

The use of non-pharmacological technique such as Jacobson Progressive Muscle Relaxation (PMR) provides a safe, affordable and accessible alternative. The mechanism of action of PMR is to decrease muscle tension and achieve relaxation of the mind, which has been demonstrated to effectively treat anxiety and stress. Thus, the efficacy of PMR in decreasing anxiety and stress in the elderly and enhancing mental health and quality of life has to be investigated.

OBJECTIVES

The study aimed to evaluate the impact of Jacobson's muscle relaxation techniques in reducing anxiety and stress among the elderly.

METHODOLOGY

The research design that was adopted was a quantitative, quasi-experimental pre-test and post-test study. The experiment was carried out at the chosen old age homes in Krishnagiri and a sample of 60 people (30 experimental and 30 control) were picked by purposive sampling.

Standardized measures, the Geriatric Anxiety Scale (GAS), and Perceived Stress Scale (PSS), were used to gather data. The experimental group was subjected to PMR intervention and the control group was not subjected to any intervention. The analyses of data were performed based on descriptive statistics and inferential statistics, paired t-test, independent t-test, chi-square test, and correlation to determine effectiveness and associations.

RESULT

The demographic information reveals that the majority of them in both groups, were aged between 61-65 years with relatively equal distribution in terms of age. The gender distribution was almost even. In terms of education, most of them were either having primary or secondary education with a smaller percentage not having any formal education or higher education. They were mostly married, and the remaining were widowed, with very few being unmarried and divorced/separated. The duration of stay of most old aged was 6 months to 3 years in old age homes, with lesser number with shorter or longer stays. With regard to family visits, most of them stated that they had weekly family visits, which implies moderate family contact in both groups. (Table 1)

The majority of elderly in the experimental group had moderate anxiety (50%) and severe anxiety (40%) in the pre-test, which shifted to mild anxiety (66.67%) in the post-test, with no participants (0%) in severe anxiety. Similarly, for stress, the majority had moderate stress (50%) and high stress (33.33%) in the pre-test, which changed to low stress (50%) in the post-test, with only 10% remaining in high stress. In the control group, the majority remained in moderate anxiety (40% pre-test, 46.67% post-test) and moderate stress (40% pre-test, 46.67% post-test), indicating no improvement. (Table 2)

The intervention was effective and the mean scores were significantly reduced by the experimental group (28.50 to 20.90; $t = 6.227$, $p = 0.000$). The control group did not find a significant statistical difference in the level of stress, and the mean scores were slightly reduced, as they did increase by 27.20 to 28.96 ($t = -0.644$, $p = 0.525$). (Table 3)

There was no significant correlation between demographics and post-test anxiety and stress in the experimental group and post-test anxiety in the control group ($p > 0.05$). But, in the control group, there was a significant relationship between post-test stress and the duration of stay, family visits, and chronic health conditions, but the other variables did not have any association.

DISCUSSION

The researchers discovered that the Progressive Muscle Relaxation technique developed by Jacobson could be effectively used to significantly decrease anxiety and stress levels in older adults who comprised the experimental group as it was seen that post-test scores were higher and statistically significant findings were obtained. Conversely, the control group did not improve with anxiety and stress levels either being the same or getting worse. Most demographic variables did not have a significant relationship with outcomes, with the exception of relationships between some specific factors and outcomes in the control group.

CONCLUSION

The research finds that the Progressive Muscle Relaxation method of anxiety and stress reduction by Jacobson is an efficient, harmless, and non-pharmacological form of intervention with regard to anxiety and stress levels in the aged, which enhances the psychological well-being of the elderly.

RECOMMENDATION

Old age homes and healthcare facilities should incorporate Jacobson's muscle relaxation techniques as a routine care strategy to manage anxiety and stress among the elderly. Nurses and caregivers should receive periodic training and hands-on workshops to ensure proper implementation and supervision. Further research is recommended to tailor relaxation techniques based on individual needs, severity levels, and to examine the influence of caregiver-to-patient ratios on outcomes.

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Table 1: Demographic Variables of Elderly.

Demographic Variable	Category	Experimental Group F (%)	Control Group F (%)
Age (years)	55–60 years	10 (33.3%)	12 (40.0%)
	61–65 years	12 (40.0%)	8 (26.7%)
	Above 65 years	8 (26.7%)	10 (33.3%)
Gender	Male	15 (50.0%)	13 (43.3%)
	Female	14 (46.7%)	15 (50.0%)
	Transgender	1 (3.3%)	2 (6.7%)
	Prefer not to say	0 (0.0%)	0 (0.0%)
Educational Qualification	No formal education	5 (16.7%)	6 (20.0%)
	Primary (up to 5th)	10 (33.3%)	8 (26.7%)
	Secondary (6th–12th)	10 (33.3%)	12 (40.0%)
	Graduate and above	5 (16.7%)	4 (13.3%)
Marital Status	Married	18 (60.0%)	16 (53.3%)
	Unmarried	3 (10.0%)	5 (16.7%)
	Widowed	6 (20.0%)	7 (23.3%)
	Divorced/Separated	3 (10.0%)	2 (6.7%)
Duration of Stay	< 6 months	7 (23.3%)	5 (16.7%)
	6 months–1 year	10 (33.3%)	9 (30.0%)
	1–3 years	9 (30.0%)	10 (33.3%)
	> 3 years	4 (13.3%)	6 (20.0%)
Family Visits	Weekly	12 (40.0%)	10 (33.3%)
	Monthly	10 (33.3%)	12 (40.0%)
	Occasionally	5 (16.7%)	5 (16.7%)
	Never	3 (10.0%)	3 (10.0%)
Chronic Conditions	Diabetes	8 (26.7%)	10 (33.3%)
	Hypertension	12 (40.0%)	10 (33.3%)
	Arthritis	7 (23.3%)	5 (16.7%)
	None	3 (10.0%)	5 (16.7%)
Exposure to Relaxation	Jacobson’s PMR	15 (50.0%)	16 (53.3%)
	Yoga/Meditation	5 (16.7%)	7 (23.3%)
	Breathing exercises	5 (16.7%)	4 (13.3%)
	No exposure	5 (16.7%)	3 (10.0%)

Table 2: Paired 't' Test (Within Group Comparison)

Variable	Group	Pre-test Mean	Post-test Mean	Mean Difference	SD	t-value	P value	Significance
Stress	Experimental	28.50	20.90	7.60	9.50 / 8.99	6.227	0.000	S*
Stress	Control	27.20	28.96	-1.76	10.61 / 9.71	-0.644	0.525	NS

Table 3: Unpaired 't' Test (Between Group Comparison)

Variable	Test	Experimental Mean	Control Mean	Mean Difference	SD (Exp/Con)	t-value	p-value	Significance
Anxiety	Pre-test	57.50	46.60	10.90	16.28 / 19.40	2.360	0.221	NS
	Post-test	33.33	50.00	16.67	11.98 / 18.56	4.130	0.000	S*
Stress	Pre-test	28.50	27.20	1.30	9.50 / 10.61	0.500	0.620	NS
	Post-test	20.90	28.96	8.06	8.98 / 9.71	3.340	0.001	S*

Cite this article as: R. Vaidegi et al. A Study to assess the Effectiveness of Jacobson's Muscle relaxation Techniques at reducing anxiety and stress among the elderly residing at selected old age home in Krisbnagiri District. *International Journal of Innovative Research in Health Science*, 2(4), 21-24.