



## Research Article

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### EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE ON STRESS AMONG HEMODIALYSIS PATIENTS AT SELECTED SETTINGS, CHENNAI, INDIA

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#### ABSTRACT

Hemodialysis is a lifelong treatment for chronic kidney disease which creates intense physical, emotional and economical stress. Progressive muscle relaxation therapy (PMRT) is an alternative therapy to control stress among patients. The aim of the study is to find out the effectiveness of progressive muscle relaxation on stress among hemodialysis patients at Chennai. A quasi experimental equivalent control group design was used and conveniently allotted 15 samples in control and 15 in experimental group. The experimental group received the PMRT and the control group received the hospital routines. The Pretest and posttest level of Stress was assessed by Hemodialysis Stressor Scale (HSS). The comparison of post test level of HSS score between experimental and control group was calculated by Mann-Whitney U test. The posttest mean score was 47.80 in experimental group and 57.93 in control group with the Z value of 9.01 which denotes high statistical significance at  $p < 0.001$ . The study results proved that the regular practice of progressive muscle relaxation technique highly reduces the stress among hemodialysis patients.

**Keywords:** Hemodialysis, stress, PMRT

#### INTRODUCTION

Chronic kidney disease is a devastating medical, social and economic problem for patients and their families.<sup>1</sup> Globally 10% of the population worldwide were affected by chronic kidney disease (CKD). Over 2 million people received treatment with dialysis and kidney transplant to stay alive.<sup>4</sup>

Hemodialysis is a life saving treatment and also life changing experience for many patients.<sup>5</sup> The need for continuous treatment brings uncertainty about their future, restrictions in their dietary habits, social life, ability to maintain their job, body appearance, limitations in their role performance causes stress in their life. Activities of daily living, vocational activities, social activities, recreational activities may all be adversely affected by a regular two times or three times per week hemodialysis schedule.<sup>3</sup>

Dialysis or kidney transplantation creates a huge financial burden for the majority of the people. In another 112 countries, many people cannot afford treatment at all, resulting in the death of over 1 million people annually from untreated kidney failure<sup>2</sup>

Stress mainly occurs due to the failure of a person to cope with emotional or physical threats.<sup>7</sup> The inappropriate coping of the hemodialysis patients decrease the quality of life<sup>8</sup> and lead to physical, emotional, social and economical problems.<sup>9</sup> Pharmacological methods are costly and may lead to complication. Non pharmacological methods like relaxation therapy can reduce stress through impact on mental and physical conditions, depression, mood, anxiety and self esteem.<sup>10</sup>

Haemodialysis results in a marked change in the quality of patients life, due to number of modifications and restrictions, which affect patients psychological and physiological wellbeing. The most frequently reported stressors are food and fluid

restrictions, unemployment, changes in body appearance, limitation in physical activities, frequent hospitalisations, the length of time on dialysis, uncertainty about the future, changes in life style, increased dependence, and sleep disturbances.

Mythrey RC et.al, reported that Water refreshes the mind and relieves the stress or exhaustion of both mind and body. But Water is restricted to the hemodialysis patients produces enormous amount of psychological stress than any other stressors.<sup>11</sup>

Progressive muscle relaxation technique is one of the non invasive technique which has proved to reduce the stress, anxiety, pain, fatigue and improves sleep, QOL of patients. Hence the investigator used this technique to find out its effectiveness on hemodialysis patients.

Number of studies have been undertaken to explore these stressors, there is a necessity for further exploration of this subject in order to maintain and improve the quality of life in this population.

#### Statement of the problem

A Quasi experimental study to evaluate the effectiveness of progressive muscle relaxation technique on stress among hemodialysis patients at selected settings, Chennai.

#### Objectives

1. To assess and compare the pre and post test level of stress among hemodialysis patients within and between experimental and control group.
2. To associate the selected demographic variables with level of stress among Hemodialysis patients in experimental group.

**Research Hypotheses**

- H<sub>1</sub>: There is a significant difference in the pre and posttest level of stress among hemodialysis patients within and between experimental and control group.
- H<sub>2</sub>: There is a significant association of selected demographic variables with the level of stress among hemodialysis patients in experimental group.

**MATERIALS AND METHODS**

The quasi experimental equivalent control group design was used to conduct the study among hemodialysis patients lions club hospital, Chennai. Totally 30 hemodialysis patients, were allotted 15 each in experimental and control group by convenient sampling technique.

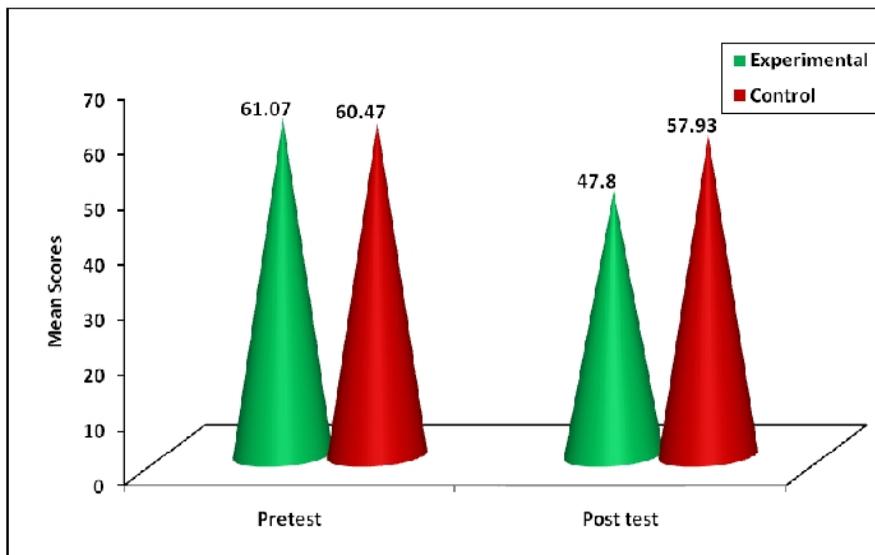
The hemodialysis patients who attended the dialysis clinic on Monday and Wednesday morning were allotted to experimental group and patients who attended on Tuesday and Wednesday noon were allotted to the control group. The samples included in the study were who fulfilled the inclusion criteria with age 20-70 years; speaks English or Tamil and receives Hemodialysis treatment two times a week. Samples with paralysis, cognitive impairment and hearing impairment were excluded from the study.

After obtaining formal permission from the setting, the patients were asked their willingness to participate in the study and

informed consent was obtained. After collecting the demographic data the pretest level of stress among hemodialysis patients in experimental and control group was assessed using Hemodialysis stressor scale (HSS). After the pretest the experimental group received Progressive muscle relaxation therapy (PMRT), once a day for 15-20 minutes for four weeks along with hospital routine. For reinforcement, pamphlet on PMRT was provided to all samples in experimental group. The control group followed the hospital routine. At the end of fourth week, the posttest level of stress among experimental and control group was assessed by the same tool. After the posttest, PMRT was provided to the control group and reinforced with the pamphlets. My ethical clearance no is (002/11/2013/IEC/SU dated 15 November 2013

**RESULTS**

The analysis of Wilcoxon signed-rank test was done to assess and compare the level of stress within experimental and control group revealed that the level of stress was similar in experimental and control group at the baseline. There was a significant (p<0.001) difference in the pretest (61.07 ± 4.51) and posttest (47.80 ± 3.27) level of stress in experimental group observed after administration of PMRT. There is no significant difference in pretest (60.47 ± 3.20) and posttest (57.93 ± 2.86) level of stress in the control group.



**Figure 1: Comparison of pre and posttest Level of stress among experimental and control group**

The analysis of Mann Whitney U test to assess and compare the level of stress between experimental and control group revealed that the posttest mean score was 47.80with SD 3.27 in experimental group, whereas in control group it was 57.93 with the SD of 2.86. The unpaired test value of Z =9.01proved that

there was a high statistical significant difference in the level of stress between the experimental and control group at p<0.001. PMRT had significantly reduced the level of stress in experimental group (17 %) than in the control group (3.2%).

**Table 1: comparison of pretest and posttest level of stress between experimental and control group**

	Experimental		Control		Mean difference	Mann-Whitney U test
	Mean	SD	Mean	SD		
Pretest	61.07	8.69	60.47	3.20	0.60	Z=0.42P=0.67, not significant
Posttest	47.80	3.27	57.93	2.96	10.13	Z=9.01 P=0.001*** significant
Percentage of stress reduction score with 95% CI	17.0% (12.7% 21.3%)		3.2% (0.5%- 6.6 %)			

Not significant P >0.0 \* significant at P ≤0.05 \*\* highly significant at P ≤0.01 \*\*\* very high significant at P ≤0.001

The Figure 2 shows the significant association of level of stress with selected demographic variable such as Elderly, females and married patients at  $p < 0.01$  was confirmed using Kruskal-L Wallis H Test / Mann Whitney U –Test.

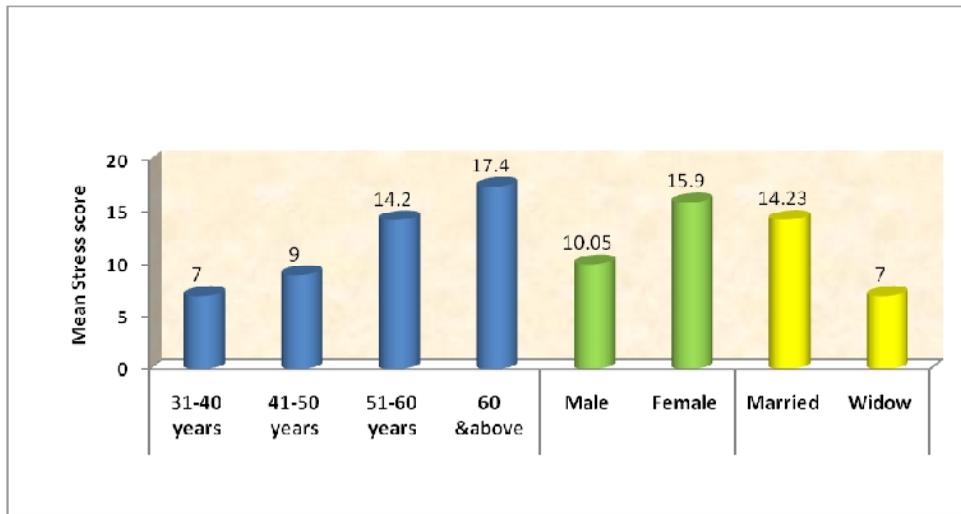


Figure 2: Association of selected demographic variable with level of stress in experimental group

## DISCUSSION

The present study has been conducted to evaluate the effectiveness of progressive muscle relaxation therapy on level of stress among hemodialysis patients. The study results highlighted that the PMRT helped to reduce the level of stress among hemodialysis patients than those who did not receive any intervention. It gives evidence that PMRT is a simple, cost effective and safe technique to reduce the stress.

Yildirim YK, Fadiloglu C., supported that PMRT helped to decrease the level of stress and had positive impact on quality of life among dialysis patients.<sup>6</sup>

## CONCLUSION

Stress is an inevitable part of human life. Stressor to one person cannot be the same to another person. Progressive muscle relaxation technique proved to be an effective method to reduce the level of stress among hemodialysis patients. As it is a non-invasive technique and easy to learn, it can be used for all patients.

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