# Effectiveness of Guided Imagery Technique in Reduction of Stress Level among Chronic Renal Failure Patients

**Sateesh Biradar[1], Ashwini Patil[2]**

*[1]Principal, HOD of Psychiatric Nursing,[2]Associate Professor, P P Savani School of Nursing, P P Savani University, Kosamba, Dhamdod, Dist- Surat, 394125, Gujarat, India*

## Abstract

**Background:** A quasi experimental study to evaluate the effectiveness of guided imagery technique in reduction of stress level among chronic renal failure patients. The aim of the study wasto determine the stress level among patients with chronic renal failure in experimental group after introduction of guided imagery. Methods and Material: A true experimental two-group pre-test - post-test design was used for the present study. The sample consisted of 100 chronic renal failure patients undergoing dialysis were randomly assigned to experimental group and control group (N=50+50=100). Data was analysed using paired and unpaired't' test, chi-square test, Karl Pearson correlation co-efficiency, and Spearman's correlation co-efficiency. **Results:** In experimental Group 62% of the samples had moderate level of stress, 20% of the samples had severe level of stress and 18% of the samples had mild level of stress with mean and SD of 64.02, 5.88. There was a significant reduction in the mean post test stress score of experimental group compared to mean pre test stress score of experimental group at 0.05 level of significance. ($t_{49}$ = 6.526, P < 0.05). The results showed that chronic renal failure patients had significant level of stress related to their illness and guided imagery is an effective intervention for reduction of stress. **Conclusion:** Guided imagery is a simple non-invasive, cost effective, method that can be used for reduction of stress without any adverse effects on the patients. Patients themselves can practice their own imagery without any assistance.

***Keywords:*** *Guided imagery, chronic renal failure patients, stress.*

## Introduction

One of the most important life-threatening chronic illnesses that is growing worldwide is chronic renal failure. It is a gradual and progressive loss of the ability of the kidneys to function normally. The change is irreversible and is due to loss of nephrons of kidney. (1) Patients with chronic renal failure undergoing dialysis have to face the burdens of long-term illness and numerous treatment associated stressors. The ability of these patients to cope with and adapt to these stresses has an important influence on physical and psychological well being. When people realize that their continued life is totally dependent on a machine, a reaction characterized by depression, anxiety or apathy occurs. The individual undergoing chronic dialysis exemplifies the models of man in a state of disharmony. The stresses of his disease and its treatment cause the individual to seek new ways of adapting to this life-threatening change. (2)

Aspects of stress response itself may also develop into chronic conditions like increased blood pressure, stress ulcers. When new stressors are superimposed on existing illness, they may interfere with the body's ability to cope with that illness, which may then become more severe or overwhelming. (3) In chronic renal failure, immuno-suppression needs much attention because it makes the client very susceptible to infection. (4)

When people are under stress, they use different coping patterns which help in promoting recovery from

**Corresponding Author**:
**Name Dr. Sateesh Biradar**
Principal, P P Savani School of Nursing
P P Savani University, Kosamba, Dhamdod, Dist-Surat, 394125, Phone numbers 9099919288
E-mail address sateesh.biradar@ppsu.ac.in

or prolonging life. Here it is clear that chronic renal failure patients are in need of stress management which will help them to relax, decrease blood pressure and increase immunity. Guided imagery is a well known intervention to attain these. Some of these therapies include relaxation technique, imagery, acupuncture, nutritional therapy and massage therapy

In chronic renal failure patients, psychosocial changes in the client are among the biggest and hardest problems the nurse must deal with. Clients often suffer from role reversal, loss or curtailing of employment, and multiple lifestyle changes. Scheduling dialysis can create many difficulties. Both the client's self-concept and body image may be altered leading to further problems with work and relationships. Depression can be very severe and in some clients may precipitate in suicide. (5)

Chronic diseases are assuming increasing importance among the adult population in both developed and developing countries. The prevalence of chronic disease is showing an upward trend in most countries and for several reason this trend is likely to increase. Most common chronic diseases include cancer, chronic renal failure, coronary artery diseases, hypertension, diabetes, COPD etc[8] with rising prevalence of these diseases in India, prevalence of CKD is expected to rise, and obviously this is the key target population to address.[8]

Guided imagery is a skill that can be taught by nurses and can be learned in both inpatient and outpatient settings. (4) The daily sessions of the guided imagery makes heavy use of the imagery in changing the participant's perceptions of the stress through cognitive/ imagery restructuring. The person is encouraged to image the salubrious changes taking place. Imagining the overall feeling of health and wellbeing seems to actualise the body is becoming whole, healthy, beautiful and powerful. (7)

Teaching relaxation skills is consistent with the concept that patients who participate in their care are more autonomous. Once it is learned they can practice by themselves. Relaxation training is cost-effective also. For patients, the goal of using imagery is to replace the negative images that provoke fear; hopelessness and anxiety with positive images of healing and well being that contribute to recovery. (6) When combined with scientific technology and modern medicine, imagery can facilitate the patient's comfort and healing – an outcome both the patient and the nurse may find deeply satisfying.

I observed from the nephrology hospital that most of the patients with ESRD suffer from some form of depression. So the researcher interested to provide one of the relaxations, non invasive and non pharmacological managements such as guided imagery to the patients with End Stage Renal Disease to reduce the level of stress. Researcher's Beck's and the significance of problem prompted to select guided imagery, a simple technique in patients with End Stage Renal Disease.

**Objectives**

— To determine the stress level among chronic renal failure patients in Experimental group and Control group.

— To determine the stress level among patients with chronic renal failure in Experimental group after introduction of guided imagery.

— To compare the pre-test and post-test stress level of Experimental group and control group.

— To find the association between level of stress with selected socio demographic variables among chronic renal failure patients in Experimental group and Control group.

## Subjects and Methods

**Approach**

A quantitative research approach is used to evaluate the effectiveness of guided imagery technique in reduction of stress level among chronic renal failure patients.

**Research design**

Two-group pre-test - post-test design was used.

Research setting

The study was conducted at selected P PSavani Hospital of Surat, Gujarat.

Sample size

— A sample of 100 (50-Experimental group & 50-Control group) chronic renal failure patients who met the inclusion criteria was selected for this study.

Sampling technique

— Convenience sampling technique was used to select the sample and subjects were assigned randomly to experimental and control group using lottery method.

Demographic Variables

Age, sex, religion, educational status, occupational status, income, type of family, marital status, responsibility towards family, duration of chronic renal failure and frequency of receiving hemodialysis,

— Independent Variables: Guided imagery technique is the independent variable in this study.

— Dependent variable**:** Stress among chronic renal failure patients

## Results

The present study revealed that in experimental group about 31 (62%) of the samples had moderate level of stress, 10 (20%) of the samples had severe level of stress and 9 (18%) of the samples had mild level of stress with mean and SD of 64.02, 5.88. before administration of guided imagery.

In control group pre test score results revealed that 36 (72%) of the samples had moderate level of stress, 7 (14%) of the samples had severe level of stress and 7 (14%) of the samples had mild level of stress with mean and SD of 65.14, 4.95.

Findings reveals that 25 (50%) of the samples had mild level of stress, 19 (38%) of the samples had moderate level of stress and 6 (12%) of the samples had severe level of stress with mean and SD of 58.98, 8.10. in experimental group after introduction of guided imagery.

In control group post test result reveals that 36 (72%) of the samples had moderate level of stress, 9 (18%) of the samples had severe level of stress and 5 (10%) of the samples had mild level of stress with mean and SD of 64.02, 5.88.

Findings reveals that 25 (50%) of the samples had mild level of stress, 19 (38%) of the samples had moderate level of stress and 6 (12%) of the samples had severe level of stress with mean and SD of 58.98, 8.10. in experimental group after introduction of guided imagery.

In control group post test result reveals that 36 (72%) of the samples had moderate level of stress, 9 (18%) of the samples had severe level of stress and 5 (10%) of the samples had mild level of stress with mean and SD of 64.02, 5.88.

**Table 1: Comparison of mean and standard deviation of pre-test and post-test score level of stress of chronic renal failure patient among experimental group.**

| Group | Experimental group | | | | |
|---|---|---|---|---|---|
| | **Mean** | **SD** | **t** | **D.f** | **Inference** |
| Pre-test | 64.02 | 5.88 | 6.526 | 49 | Significant |
| Post test | 58.98 | 8.10 | | | |

In experimental group, the results revealed that there was a significant difference between mean pre-test score and post test score in i.e. 64.02 & 58.98. Since the calculated value of't' ($t_{49} = 6.526$, $P < 0.05$) was greater than the table value of't' ($t_{49} = 2.009$, $P < 0.05$). Hence we can conclude that there was a significant reduction in the mean post test stress score of experimental group compared to mean pre test stress score of experimental group at 0.05 level of significance. So null hypothesis i.e. $H_{01}$ is rejected.

**Table 2: Comparison of Pretest and Posttest mean score of stress in different areas among experimental group**

| Domains | Group | | | | Mean difference | Student independent t-test |
|---|---|---|---|---|---|---|
| | Pretest | | Posttest | | | |
| | Mean | SD | Mean | SD | | |
| Psychological area | 28.02 | 3.38 | 25.60 | 4.04 | -2.42 | t=8.03 P=0.001*** (S) |
| Physiological area | 15.34 | 1.80 | 14.14 | 2.24 | -1.20 | t=6.12 P=0.001*** (S) |
| Social area | 13.02 | 1.63 | 12.68 | 1.73 | -0.34 | t=2.44 P=0.02* (S) |
| Spiritual area | 4.98 | 1.00 | 4.68 | 1.10 | -0.30 | t=2.22 P=0.03* (S) |
| Total | 61.36 | 5.76 | 57.10 | 7.12 | -4.26 | t=10.99 P=0.001*** (S) |

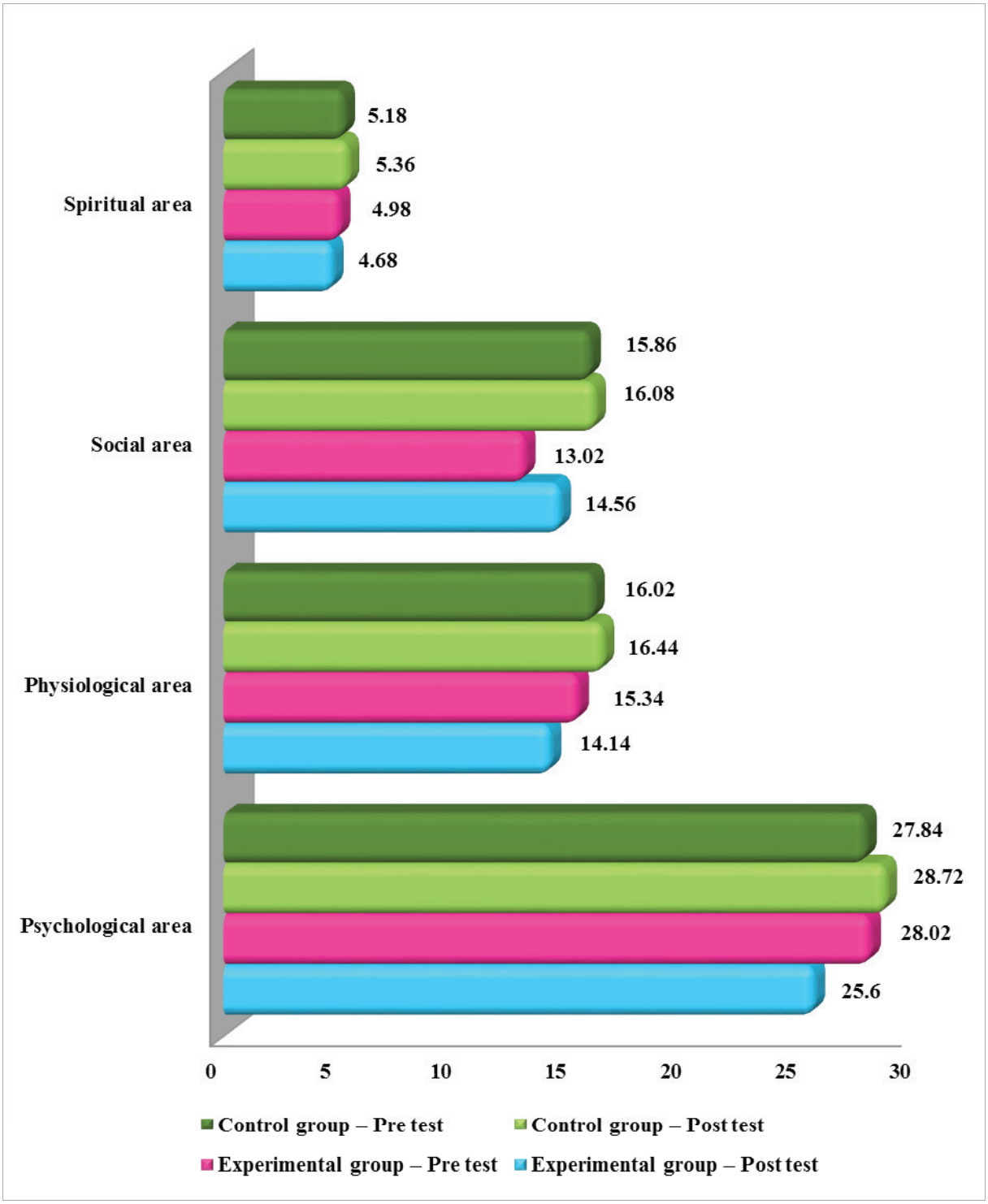
In control group, results revealed that there was no significant difference between mean pre-test score and post test score in control group i.e. 65.14 & 66.6. Since the calculated value of't' ($t_{49}$ = 0.0001, P < 0.05) was less than the table value of't' ($t_{49}$ = 2.009, P < 0.05). Hence we can conclude that there was no significant reduction in the mean post test stress score of control group compared to mean pre test stress score of control group at 0.05 level of significance. So null hypothesis i.e. $H_{02}$ is accepted.

**Table 3: Comparison of Pretest and Posttest mean score of stress in different areas among Control group**

| Domains | Group | | | | Mean difference | Student independent t-test |
|---|---|---|---|---|---|---|
| | Pretest | | Posttest | | | |
| | Mean | SD | Mean | SD | | |
| Psychological area | 27.84 | 3.11 | 28.10 | 2.49 | 0.26 | t=0.60 P=0.55 (NS) |
| Physiological area | 16.02 | 1.85 | 16.44 | 1.69 | 0.42 | t=1.73 P=0.09 (NS) |
| Social area | 13.76 | 3.13 | 14.30 | 1.94 | 0.54 | t=0.96 P=0.34 (NS) |
| Spiritual area | 5.18 | 1.10 | 5.36 | .88 | 0.18 | t=0.83 P=0.40 (NS) |
| Total | 62.80 | 5.61 | 64.20 | 3.80 | 1.40 | t=1.77 P=0.08 (NS) |

There was significant difference among psychological, physiological, social and spiritual areas of stress in experimental group and control group.

**Figure 1: Comparison of mean score of stress in different areas among experimental group and control group**




Present study results showed that there was no significant association between pre test stress level with selected demographic variables such as age, sex, religion, marital status, family income, work status, bad habits, family responsibility and supportive therapy of chronic renal failure patients in experimental group.

But there was association between pre test stress levels with educational status of chronic renal failure patient in experimental group. Hence null hypothesis i.e.

$H_{04}$ is rejected.

There was no significant association between pre test stress level with selected demographic variables such as age, sex, religion, educational status, marital status, family income, work status, bad habits, family responsibility and supportive therapy of chronic renal failure patients in control group.

## Discussion

The findings also supported by Shiow Luan Tsay., (2004) conducted a randomized controlled trial to investigate the effectiveness of Guided imagery on depression among patients with End Stage Renal Disease. A total of 106 participants were included in the study. The measures included the Beck's depression scale. Data of depression measure were collected at pre treatment and on 2nd, 3rd and 4th day. The post-test revealed that patients in the experimental group were significantly having lower scores of depression than patients in the control group. In conclusion, the study provided an alternative method for health care providers to managing End Stage Renal Disease patients with depression. Post-test revealed that the patients in the experimental group were significantly having lower scores of depression than patients in the control group. Comparisons indicated that there were significant differences between the experimental group (p=0.01) and control group (p=0.003).[9]

The study which was conducted by Beizaee, Yaser & Rejeh, Nahid & Heravi, Majideh & Tadrisi, Seyed & Bahrami, Tahereh. (2017) study which was designed with the aim of determining the effect of mind-guided imagery on decrease of fatigue in patients undergoing hemodialysis. The present study was a quasi-experimental one, carried out on 80 patients undergoing hemodialysis at ShahidRajaei Hospital, Alborz province, during 2015-2016. The patients were selected by convenience sampling method and were randomly divided into two control (n = 40) and experimental (n = 40) groups. Findings of this study showed a significant difference between pre- and post-interventions, where the fatigue mean score in the experimental group changed from 4.31 ± 1.44 to 2.32 ± 1.64 (P < 0.001), but no significant difference was observed in the control group (P > 0.05).[10]

## Conclusions

Chronic renal failure patients had significant level of stress related to their illness. There was significant reduction in the level of stress in Experimental Group after the practice of guided imagery. There was significant difference among psychological, physiological, social and spiritual areas of stress. There was significant reduction in the level of stress in psychological, physiological and social areas. There was no significant reduction of stress in spiritual area.

There was a significant reduction in the mean post test stress score of experimental group compared to control group at 0.05 level of significance.

All people may not be successful in using guided imagery as they may have various kinds of stresses which prevent them from concentrating. Under such circumstances repetitive use for a longer period is needed to have good result.

**Ethical Clearance**- Taken from Civil Hospital, Surat

**Source of Funding**- Self

**Conflict of Interest** -NIL

## References

1. Tsay SL, Lee YC, Lee YC. Effects of an adaptation training programme for patients with end-stage renal disease. J Adv Nurs 2005; 50(1):39-46.
2. Nagle LM. The meaning of technology for people with chronic renal failure. Holistic nursing practice. 2006; 12(4):78-92.
3. Lippincott Williams & Wilkins. "*Medical Surgical Nursing"*. 5th Edition. Wolters Kluwer Pvt Ltd; 2016.
4. Sharon Lewis Linda Bucher Margaret Heitkemper Mariann Harding Jeffrey Kwong Dottie Roberts. "Medical Surgical Nursing". 3rdSouth Asia edition. Elsevier Publications;2016
5. Donna Ignatavicius M. Linda Workman. "Medical Surgical Nursing Patient- Centered Collaborative Care." 7th Edition. Elsevier Publications; 2015. p1340-66.

6. Marisa H. Loft & Linda D. Cameron. Using Mental Imagery to Deliver Self-Regulation Techniques to Improve Sleep Behaviors. *Annals of Behavioral Medicine* 2013;46(3):260-72.
7. Gonzales EA[1], Ledesma RJ, McAllister DJ, Perry SM, Dyer CA, Maye JP. Effects of guided imagery on postoperative outcomes in patients undergoing same-day surgical procedures: a randomized, single-blind study. AANA J 2010; 78(3):181-8.
8. Niu S, Li IC. Quality of life of patients having renal replacement therapy. J Adv Nurs.2005; 51(1):15-21.
9. Tsay SL, Lee YC, Lee YC. Effects of an adaptation training programme for patients with end-stage renal disease. J Adv Nurs 2005; 50(1):39-46.
10. Beizaee, Yaser & Rejeh, Nahid & Heravi, Majideh & Tadrisi, Seyed & Bahrami, Tahereh. The Effect of Mind-guided Imagery on Decreasing Fatigue in Patients Undergoing Hemodialysis. Iranian Journal of Nursing Research 2017;12.16-22.10.21859/ijnr-1.