# EFFECTIVENESS OF BENSON'S RELAXATION TECHNIQUE ON STRESS AMONG HEMODIALYSIS PATIENTS

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***ABSTRACT***

*A pre experimental study was conducted to assess the effectiveness of Benson's relaxation technique on stress among hemodialysis patients in a selected hospital at Alappuzha district. The objectives of the study were to assess the pretest and posttest level of stress among hemodialysis patients, to find out the effectiveness of Benson's relaxation technique on stress among hemodialysis patients, to find out the association with pretest level of stress and selected socio demographic variables and to find out the association with pretest level of stress and selected clinical variables. One-group pretest posttest only design was selected for the study. The sample composed of 35 hemodialysis patients, selected by non-probability purposive sampling technique. The conceptual framework of the study was Roy's Adaptation Theory. Benson's relaxation technique was administered to the experimental group daily 10 minutes, for a period of 25 days. The mean post test score 17.69 with SD 5.63 was significantly lower than the mean pretest score 24.71 with SD 5.42 with a mean difference of 7.02. The calculated't' value 19.78 is significant at p< 0.05 level with degree of freedom at 34. Hence we can conclude that the Benson's relaxation technique was effective in reducing stress level of hemodialysis patients in a selected hospital at Alappuzha district. The calculated Chi-square value was less than the table value at p< 0.05 level of significance. So there was no significant association between pretest level of stress with selected socio demographic variables and clinical variables.*

***Keywords**: Hemodialysis patients; Stress; Benson's relaxation technique.*

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**INTRODUCTION**

Health is a state of perfect harmony between all the organs and systems of the body. Good health is more than being free from disease, good hygiene and the access to medical and social care also important. According to World Health Organization (WHO) health is a state of complete physical, mental and social well-being not merely the absence of disease or infirmity. Thus health is a positive concept emphasising social and personal resources as well as physical capabilities. Perception about health is varies according to individual's previous experience, expectation of life, age and socio cultural factors. A disease is an abnormal condition that affects the body of an organism. An impairment of the normal state of the living animal or plant body or one of its parts that interrupts or modifies the performance of the vital functions.3The kidneys are the most important excretory organs within the human body. The word excretion means the removal of metabolic waste substances from the body. This "metabolic waste" is the large number of chemical reactions that occur in the cells, tissues and organs. Of these substances, some of the by-products and end-products of metabolism are toxic and have to be removed from the body, before they will poison the body tissues. Chronic Renal Failure (CRF) or End Stage Renal Disease (ESRD) is the progressive, irreversible deterioration in renal function in which the body's ability to maintain metabolic, fluid and electrolyte balance resulting in uraemia or azotemia. Chronic kidney disease is the condition causes reduced kidney function over a period of time. It occur when glomerular filtration rate remains below 60 ml per minute for more than 3 months or when urine albumin-creatinine ratio is over 30 mg of albumin for each gram of creatinine (30 mg/g).4-5End Stage Renal Disease is a chronic illness which inevitably reduces the lifespan of the patients. The Continuous Ambulatory Peritoneal Dialysis [CAPD], Hemodialysis (HD) and Renal Transplantation treatment modalities are not curative, instead they offer symptom relief, extend life expectancy and are intended to improve the quality of life. Hemodialysis plays an important role in maintaining renal function. It filters circulating blood through a semi permeable membrane in an apparatus to remove waste products in case of kidney failure and it attempts in replacing kidney function. Hemodialysis can be an outpatient or inpatient therapy. Routine haemodialysis is conducted in a dialysis outpatient facility, either a purpose built room in a hospital or a dedicated, standalone clinic. Less frequently haemodialysis is done at home. However, it has been argued that a number of restrictions and modifications accompany this treatment, which have a detrimental impact on the quality of patients life and affects individuals physical and psychological well-being. Much evidence exists to suggest that stress is a significant factor in haemodialysis, since the latter results in a marked change in the quality of patients' life. Relaxation is one of the most useful non pharmacological techniques, which reduce stress through impact on mental and physical conditions. Among relaxation methods Benson's relaxation method (1970) is one of the easiest to learn and administer. The relaxation response is a physical state of deep rest that changes in the physical and emotional response to stress and opposite of response may help people to counteract the toxic effects of chronic stress by slowing breathing rate, relaxing muscles and reducing blood pressure. Benson's relaxation technique is a simple version of Transcendental Meditation .This will reduce the stress and reversal of some physiologic changes associated with chronic stress. The majority of people report feelings of relaxation and freedom from stress during the elicitation of the relaxation response and during the rest of the day as well. Through this study hemodialysis patients get a relief from stress and help to improve their quality of life.

**NEED AND SIGNIFICANCE OF THE STUDY**

Stress is a state of disequilibrium that occurs when there is a disharmony between demands occurring within an individual's internal or external environment and his/ her ability to cope with that demands. It is one of the biggest health issues in the society today. Over a half of the million people will have their physical or mental health damaged as a result of renal failure. Chronic kidney disease can occur at any age but becomes more common with increasing age and is more common in women. Currently 35000 people are treated with dialysis with stress it is estimated that this number will increase > 50000 by the year 2020, in Europe the number of dialysis patient with stress is also increasing annually. The mortality rate in dialysis patient is very high with a mean death rate of 22% per year due to stress. This rate mainly influenced by age, with a yearly mortality of 4% in patients younger than 20 years rising to 35% in patient older than 65 years.20 A descriptive correlational study was conducted at Ireland (2005) to measure the overall quality of life among 97 hemodialysis patients were selected purposively by using Health survey questionnaire revealed that dialysis patients had severe stress and which negatively affect quality of life. Most of the studies investigating the stressors faced by haemodialysis patients have found them to be both physiological and psychological stressors. The most common physiological stressors for these clients are limitation of fluid, limitation of food, fatigue, and sleep disturbance. The most common psychological stressors have been

reported to include role disturbance, employment status, social support, stress, anxiety and depression. The high prevalence of stress in dialysis patients is very crucial. Appropriate diagnosis and treatment of this condition is certainly important. Among the various measures Benson's relaxation technique has been gaining popularity as a simple and easy administrative mode of alternative therapy not only for stress but also anxiety, depression, pain and insomnia. From the review of literature, the researcher understood that Benson's relaxation technique can be administered effectively for hemodialysis patients especially with high stress. Hence the researchers got interested in assessing stress among hemodialysis patients and determine the effectiveness of Benson's relaxation technique in reducing the stress among hemodialysis patients.

**STATEMENT OF THE PROBLEM**

**A study to assess the effectiveness of Benson's relaxation technique on stress among hemodialysis patients in a selected hospital at Alappuzha district.**

**OBJECTIVES OF THE STUDY**

1. To assess the pretest and posttest level of stress among hemodialysis patients.
2. To find out the effectiveness of Benson's relaxation technique on stress among hemodialysis patients.
3. To find out the association with pretest level of stress and selected socio demographic variables.
4. To find out the association with pretest level of stress and selected clinical variables.

**HYPOTHESES**

- $H_{01}$: There will be no significant difference in pretest and posttest level of stress among hemodialysis patients after practicing Benson's relaxation technique.
- $H_1$: There will be a significant difference in pretest and posttest level of stress among hemodialysis patients after practicing Benson's relaxation technique.
- $H_{02}$: There will be no significant association with pretest level of stress and selected socio demographic variables.
- $H_2$: There will be a significant association with pretest level of stress and selected socio demographic variables.
- $H_{03}$: There will be a significant association with pretest level of stress and selected clinical variables.
- $H_3$: There will be a significant association with pretest level of stress and selected clinical variables.

**Assumptions**

The study assumes that:

- Benson's relaxation technique may be effective in reducing stress among hemodialysis patients.
- Hemodialysis patients can effectively practice Benson's relaxation technique in order to reduce stress.

**Socio demographic variables**

The socio demographic variables in this study were collected in two sections. First section was demographic variables which includes age, gender, religion, education, type of family, marital status, occupation, place of residence, family income, percentage of income spent for treatment, money expended so far for treatment, financial support, medical insurance, co morbidities, family history of chronic kidney disease, duration of dialysis treatment, total number of dialysis done, average loss of working days per week, performance of daily activity, most commonly faced problem before dialysis, most commonly faced problem during dialysis and most commonly faced problem after dialysis. Second section was clinical variables which include post dialysis weight, temperature, pulse, respiration, systolic blood pressure, diastolic blood pressure, blood urea nitrogen, serum creatinine, serum sodium and serum potassium.

**Dependent variable**

In the study, stress of hemodialysis patients was the dependent variable.

**Independent variable**

Benson's relaxation technique was the independent variable in the present study.

**RESEARCH METHODOLOGY**

**Research approach**; Quantitative Approach.

**Research design**; Pre experimental one group pretest posttest design.

**Setting of the study**; Hemodialysis unit of Century Hospital, Mulakkuzha, Alappuzha.

**POPULATION:**

**Target population**; Hemodialysis patient.

**Accessible population** ; Hemodialysis patients in the age group of 20 to 80 years with stress score 14 and above which is measured by Cohen using Perceived Stress Scale in a selected hospital at Alappuzha district.

**Sample size;** 35

**Sampling technique**: Non probability purposive sampling technique.

**TOOL AND TECHNIQUE**

**Tool 1**: Socio demographic proforma.

Section A: Demographic variables

**Technique**: Structured interview schedule

Section B: Clinical Variables

**Technique**: Bio physiological and dairy method

**Tool 2**: Cohen Perceived Stress Scale

Technique: Self-administered Structured 5 point rating scale

**Reliability of the tool**

Reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to be measuring. The tool was administered to 10 hemodialysis patients in Josco multi-specialty hospital for establishing the reliability of the instrument. The reliability of modified tool was calculated and the value was found to be 0.72 by Cronbach's alpha which indicated that the instrument was reliable.

**DESCRIPTION OF THE TOOL**

**Tool 1: Socio demographic proforma**

The socio demographic variables are sub divided in to two sections.

**Section A: Demographic variables**

In present research study demographic variables included 22 items such as age, gender, religion, education, type of family, marital status, occupation, place of residence, family income, percentage of income spent for treatment, money expended so far for treatment, financial support, medical insurance, co morbidities, family history of chronic kidney disease, duration of dialysis treatment, total number of dialysis done, average loss of working days per week, performance of daily activity, most commonly faced problem before dialysis, most commonly faced problem during dialysis and most commonly faced problem after dialysis.

Technique: Structured Interview Schedule.

**Section B: Clinical variables**

It included 10 items such as post dialysis weight, temperature, pulse, respiration, systolic blood pressure, diastolic blood pressure, blood urea nitrogen, serum creatinine, serum sodium and serum potassium.

Technique: Bio physiological and diary method.

**Tool 2: Cohen Perceived Stress Scale**

The perceived stress scale is a 10 items inventory developed by Sheldon Cohen, used to assess the degree to which participants appraise their life as stressful within the past month. The PSS is widely used instrument for measuring the perception of stress and is commonly used in health-related research. The maximum score is 40 and the minimum score is 0. There were 4 positively stated items and 6 negatively stated items. The items were answered ranging from 'never' to 'very often.' The positively stated items were 4,5,7,8 and scored as Never=4, Almost never=3, Sometimes=2, fairly often=1 and Very often=0. The negatively stated items were 1,2,3,6,9 and 10 scored as Never=0, Almost never=1, Sometimes=2, Fairly often=3 and Very often=4.

**Interpretation of stress scores**

| S. No | Score | Level of Stress |
|---|---|---|
| 1 | 0 | No stress |
| 2 | 1-13 | Mild stress |
| 3 | 14-27 | Moderate stress |
| 4 | 28-40 | Severe stress |

Technique: Self - administered structured 5 point rating scale

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**Table 2: Interpretation of stress scores**

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**Inclusion criteria**

Hemodialysis patients who are:-

•willing to participate in the study.
•male or female.
•in the age group of 20 to 80 years.
•available during the time of data collection.
•able to comprehend the instructions.
•having stress score 14 and above.
•perform hemodialysis at least thrice in a week.
•having any stress medications.

**Exclusion criteria**

Hemodialysis patients who are:-

•not willing to participate in the study.
•having any debilitating illness which restricts to practice Benson's relaxation technique.
•presently doing other exercises.
•having altered sensory perception.

**Data Collection Process**

**Step 1**

For conducting main study, researcher obtained permission from concerned authorities in Century Hospital at Alappuzha district. The data collection period from 02/12/2016 to 31/12/2016. The investigator familiarized her with subjects and explained the purpose of the study to them. An informed consent was taken from the study subjects.

**Step 2**

Pretest was conducted for the subjects by administering Cohen Perceived Stress Scale and checked the score and selected 35 subjects those who had stress score 14 and above. The socio demographic data and clinical variables were collected from subjects (02/12/2016 to 06/12/2016).

**Step 3**

Researcher demonstrated and instructed the participants to practice Benson's relaxation technique for 10 minutes once daily for three days in a week under the supervision of the researcher and all other days by themselves for a period of 25 days.

**Step 4**

Post test was conducted after 25 days of intervention (27/12/2016 to 31/12/2016) using Cohen Perceived Stress Scale.

**Plan for data analysis**

**Descriptive statistics**

1. Frequency and percentage distribution were used to describe the socio demographic variables.
2. Mean, percentage and standard deviation were used to analyze the pretest and posttest level of stress.

**Inferential statistics**

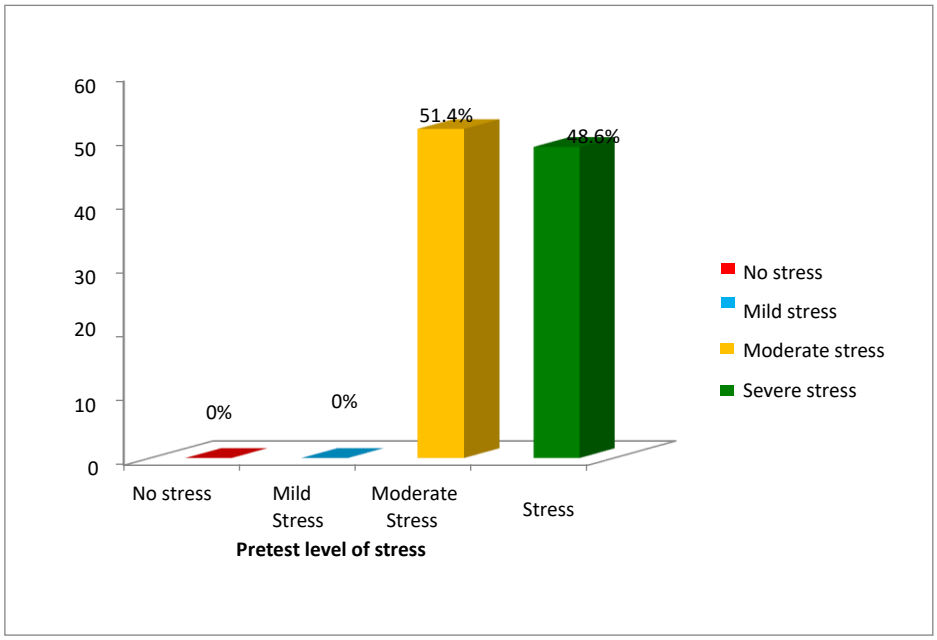
1. Paired't'test was used to compare the pretest and posttest level of stress scores.
2. Chi-square test was used to find out the association between the selected socio demographic variables and clinical variables with pretest level of stress scores.

**Section I: Description of subjects according to the socio demographic variables.**

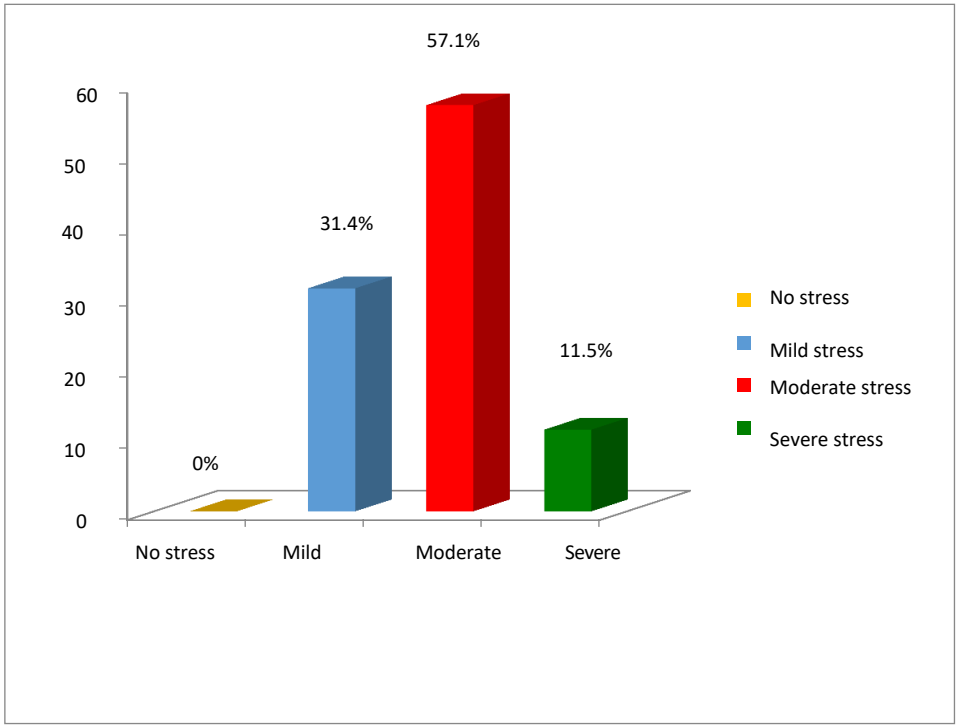
The major findings in this section are presented below:

- (51.4%) were in the age group of 60-80 years.
- (68.6%) were males.
- (54.3%) were Hindu.
- (42.8%) had up to high school education.
- (100%) belonged to nuclear family.
- (65.71%) were married.
- (28.6%) were government employed.
- (74.3%) were place of residence in Panchayat.
- (51.4%) had monthly family income between 10001 to 20000.
- (80%) were spent 25 to 50 percentage of their income for treatment.
- (37.1%) expended Rs 50001 to 100000 for treatment.
- (42.9%) were financially supported by assistance from family.
- (62.9%) had no any medical insurance.
- (45.7%) had both diabetes and hypertension.
- (100%) had no family history of chronic kidney disease.
- (42.8%) were received dialysis treatment for 1-3 years.
- (42.9%) had undergone 101 to 200 dialysis.
- (60%) were unemployed.
- (77.1%) were perform their daily activity by self,
- (60%) were facing breathing difficulty before dialysis.
- (71.4%) were facing muscle cramps during dialysis.
- (80%) were facing fatigue after dialysis.
- (42.8%) had post dialysis weight between 50-60 kg.
- (100%) had temperature between 98.6$^{o}$F to 99$^{o}$F.
- (71.4%) had pulse between 70 to 90 beats/min.
- (54.3%) were respiration between 20 to 25 breaths/min.
- (57.1%) had systolic blood pressure between 140 to 170 mm Hg.
- (48.6%) had diastolic blood pressure less than 90 mmHg and 90 to 120 mmHg.
- (51.4%) had serum sodium level less than 135 mEq/L.
- (44.6%) had blood urea nitrogen level between 100 to 120 mg/dl.
- (47.5%) had serum potassium level between 6 to 9 mEq/L.
- (35.2%) had serum creatinine level 7.5 to 10.5 mg/dl.

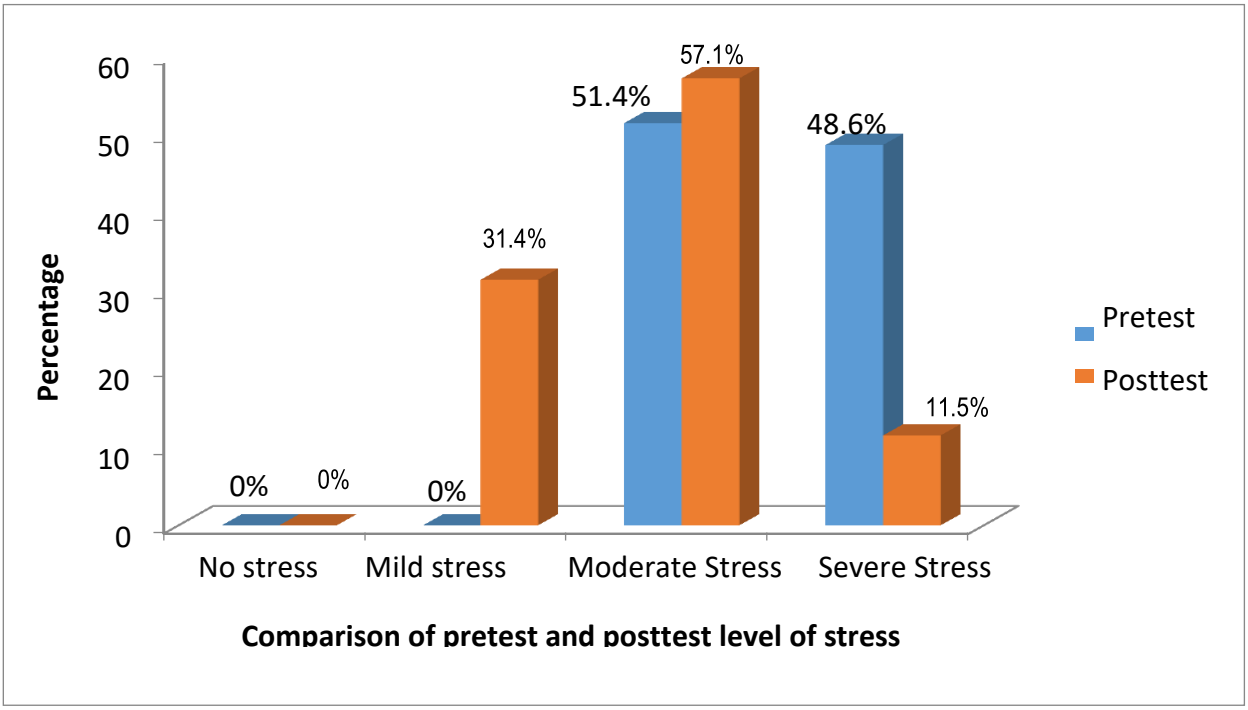
**Section II: Assessment of pretest level of stress among hemodialysis patients in a selected hospital at Alappuzha district.**




**Section III: Assessment of posttest level of stress among hemodialysis patients in a selected hospital at Alappuzha district.**



**IV: Comparison of pretest and posttest level of stress among hemodialysis patients in a selected hospital at Alappuzha district**.




**Section V: Analysis of the effectiveness of Benson's relaxation technique on stress among hemodialysis patients in a selected hospital at Alappuzha district.**

This section deals with the analysis of difference between pretest and posttest level of stress and to assess the effectiveness of Benson's relaxation technique among hemodialysis patients in a selected hospital at Alappuzha district for which paired't' test was used.

The hypotheses used for this purpose were:

- **$H_{01}$**: There will be no significant difference in posttest level of stress among hemodialysis patients after practicing Benson's relaxation technique.
- **$H_1$**: There will be a significant difference in posttest level of stress among hemodialysis patients after practicing Benson's relaxation technique.

**Table 3: Mean, SD, Mean difference and calculated t-value of stress among hemodialysis patients before and after practicing Benson's relaxation technique.**

**Mean, SD, Mean difference and calculated t-value of stress among hemodialysis patients before and after practicing Benson's relaxation technique.**

| Test | Mean | SD | Mean difference | Df | t | p-value |
|---|---|---|---|---|---|---|
| Pretest | 24.71 | 5.42 | 7.02 | 34 | 19.78 | P<0.05* |
| Post test | 17.69 | 5.63 | | | | |

*Significant at p< 0.05 level Table value – 2.032

Data reveals that the mean post test score 17.69 with SD 5.63 was significantly lower than the mean pretest score 24.71 with SD 5.42 with a mean difference of 7.02. Since the calculated' value 19.78 which was greater than the table value (2.032) with degrees of freedom 34 at p< 0.05 level of significance. Hence the null hypothesis (H01)

was rejected and research hypothesis (H1) was accepted. The study concluded that the Benson's relaxation technique is very effective in reducing stress level of hemodialysis patients.

**Section VI: Association between the pretest level of stress and selected socio demographic variables**.

This section attempts to study the association of the pretest level of stress among hemodialysis patients and selected socio demographic variables like age, gender, religion, education, type of family, marital status, occupation, place of residence, family income, percentage of income spent for treatment, money expended so far for treatment, financial support, medical insurance, co morbidities, family history of chronic kidney disease, duration of dialysis treatment, total number of dialysis done, average loss of working days per week, performance of daily activity, most commonly faced problem before dialysis, most commonly faced problem during dialysis and most commonly faced problem after dialysis.

In order to find the association between pretest levels of stress among haemodialysis patients with selected socio demographic variables, chi-square test was used and following hypotheses was formulated.

- $H_{02}$: There will be no significant association with pretest level of stress and selected socio demographic variables.
- $H_2$: There will be a significant association with pretest level of stress and selected socio demographic variables.

**Section VII: Association between the pretest level of stress and selected clinical variables.**

In order to find the association between pretest levels of stress among haemodialysis patients with selected clinical variables, chi-square test was used and following hypotheses was formulated.

- $H_{03}$: There will be no significant association with pretest level of stress and selected clinical variables.
- $H_3$: There will be a significant association with pretest level of stress and selected clinical variables.

Chi-square was used to determine the association between the pretest level of stress and selected clinical variables such as post dialysis weight, temperature, pulse, respiration, systolic blood pressure, diastolic blood pressure, serum sodium, blood urea nitrogen, serum potassium and serum creatinine. The calculated Chi-square value was less than the table value at $p< 0.05$ level of significance, hence the null hypothesis ($H_{03}$) can be accepted and research hypothesis ($H_3$) can be rejected. So there was no significant association between pretest level of stress and selected clinical variables. It is concluded that pretest level of stress is not influenced by clinical variables.

**CONCLUSION**

Renal failure is a serious medical condition affecting the kidneys. When a person suffers from renal failure, their kidneys are not functioning properly or no longer work at all. Renal failure can be a progressive disease or a temporary one depending on the cause and available treatment options. Hemodialysis is the most frequent treatment method for End stage renal disease. However, it has been argued that a number of restrictions and modifications accompany this treatment, which have a detrimental impact on the quality of patients life and affects individuals physical and psychological well-being. By performing the Benson's relaxation technique effect on the mind & brain and useful in reducing stress, to improve quality of life as well.

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