

A STUDY TO EVALUATE THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY ON ANXIETY AND QUALITY OF LIFE AMONG CHRONIC KIDNEY DISEASE PATIENTS UNDERGOING HEMODIALYSIS

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Abstract

Chronic Kidney Disease (CKD) is common throughout the world. It usually develops slowly over months to years. The last stage of CKD is End Stage Renal Disease (ESRD), at this stage renal replacement therapy i.e. dialysis or renal transplantation is required for long term survival. Hemodialysis (HD) is the most frequent therapy globally. Although the dialysis therapy allows people to extend their lives and guarantee their survival, it also affects the accomplishment of activities of daily living which causes anxiety and, in the long term, patient's decreases quality of life. The aim of study is to reduce the anxiety and to improve quality of life among Chronic Kidney Disease (CKD) patients undergoing hemodialysis with the help of progressive muscle relaxation therapy. A quasi experimental study was conducted at Gian Sagar Medical College and Hospital, Ram Nagar, among 40 CKD patients (undergoing hemodialysis), selected purposively, STAI and WHOQOL-BREF was used to collect data from patients. The results indicated that there was a significant lower post test anxiety ($p < 0.05$) and trait anxiety ($p < 0.05$) compared to the pre test state anxiety and trait anxiety. Results also indicated that there was significant higher post test QOL ($p < 0.05$) compared to the pre test. Findings of the study revealed that experimental group reported a significant lower state anxiety ($p < 0.05$) and trait anxiety ($p < 0.05$) compared to control group. results also indicated that experimental group reported a higher QOL ($p < 0.05$) compared to control group. This study revealed that there was a significant association of QOL and age ($p < 0.05$). According to the results of this study it was concluded that progressive muscle relaxation has a favorable effect to reduce anxiety and improve QOL of CKD patients undergoing hemodialysis. Randomized trail can be conducted to better define the role of various relaxation method to decrease anxiety and improve QOL of CKD patients.

Keywords: anxiety, quality of life, PMRT CKD patients, hemodialysis

INTRODUCTION

Chronic Kidney Disease (CKD) is common throughout the world. It usually develops slowly over months to years. The last stage of CKD is End Stage Renal Disease (ESRD), it occurs when the glomerular filtration rate is less than 15ml/min, and at this stage renal replacement therapy i.e. dialysis or renal transplantation is required for long term survival¹.

Symptoms of kidney failure affect all body systems; initially, salt-wasting that leads to hyponatremia produce hypotension, dry mouth, loss of skin turgor, fatigue and nausea. In later stages, irritability and confusion develop. Further loss of functioning nephrons reduces the kidneys' ability to excrete sodium, resulting in salt and water retention leading to fluid overload.

Furthermore, accumulation of potassium causes muscle irritability and weakness as the potassium level continues to raise cardiac arrhythmias and possible cardiac arrest can occur (Springhouse)².

The number of patients with End Stage Renal Disease (ESRD) is increasing steadily globally with its associated poor quality of life and high economic burden. The number of patients being treated for ESRD globally was estimated to be 2,786,000 at the end of 2011 and with a 6-7% growth rate, continuous to increase at a significantly higher rate than the world population of these 2,786,000 ESRD patients, approximately 2,164,000 were undergoing dialysis treatment i.e. Hemodialysis or Peritoneal Dialysis and around 622,000 people were living with kidney transplant³.

Hemodialysis (HD) is the most frequent therapy globally. The treatment is highly complex, demanding and potentially very restrictive and implies profound lifestyle changes. Moreover, it is associated with high social and economic costs for health systems. Although the dialysis therapy allows people to extend their lives and guarantee their survival, it also affects the accomplishment of activities of daily living and, in the long term, patient's quality of life. Moreover the reduced quality of life has been associated with increased morbidity and mortality risks in this population⁴.

ESRD patients have to cope with many adversities, like physical symptoms, special diet intake, changes in their body image. They also have to reconsider their personal, social and professional goals within the context of living with chronic illness⁵.

Every person who undergoes hemodialysis having anxiety related to disease condition, treatment quality of life of t, complication, hemodialysis procedure and its complications. It also affects the hemodialysis patients.

Anxiety is common in CKD patients. Roughly 95% of ESRD patients undergoing hemodialysis, besides the disease itself; accompanying modifications in the occupational, marital, familial, social, and personal life provide a sufficient base to give rise to anxiety. The incidence of anxiety a common disorder in hemodialysis patients is 27%-46%⁵. [Dialysis](#) is a life-changing event that can create an overwhelming amount of stress for a dialysis patient. Facing [end stage renal disease \(ESRD\)](#) can be scary enough, but many patients may also cope with [financial and insurance issues](#), juggling dialysis schedules and [work](#), unsupportive family members, concern of physical pain from dialysis and fear of death. Anxiety is also commonly seen in HD patients (Kring & Crane, 2009). Cukor et al. demonstrated a 27% incidence of anxiety among 70 urban HD patients, which was somewhat higher than the 18% incidence reported in a national survey (Kessler et al., 2005). During a 16-month follow-up study, 9% of patients had both anxiety and depression at baseline; the incidence of both conditions rose to 13% by the end of the study. At the end of the study, two-thirds of individuals with comorbid depression and anxiety at baseline had both diagnoses (Cukor et al., 2008b)⁶.

The Quality Of Life (QOL) is used to evaluate the general wellbeing of individuals and societies. It may vary according to the patient as well as disease condition. The WHO has defined QOL as An individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. Over the

past few decades, quality of life (QOL) research endpoints have emerged as valuable research tools in assessing the outcome of therapeutic intervention in chronic diseases. End stage renal disease (ESRD) is one such chronic disease causing a high level of disability in different domains of the patients' lives, leading to impaired QOL⁷. The focus in CKD has changes from terminally ill patient to caring for a person with a manageable chronic disease that requires effective monitoring and interventions over a long period of time. In recent days the use of relaxation techniques has increased in conventional health care setting. Relaxation techniques are a group of healing methods which emphasizes mind body interaction with intended benefits that includes relaxation and emotional well-being. Relaxation technique helps to bring the nervous system back in to the balance by producing the relaxation responses⁸.

Progressive Muscle Relaxation Therapy (PMRT) is one of the simple relaxation technique which includes first tensing a muscle and then releasing that tension. The basic claim of PMRT is that tensed, stressed and anxious chronic kidney disease patients can find relief from their distress, anxiety and improving QOL. Among the various relaxation techniques available, progressive muscle relaxation (PMR) focuses on reducing muscle tone in major muscle groups. Each of 15 major muscle groups is tensed and then relaxed in sequences⁹. The purpose of this study is to evaluate the effectiveness of progressive muscle relaxation therapy (PMRT) to reduce the anxiety and improve quality of life (QOL) among CKD patients undergoing hemodialysis.

OBJECTIVE

1. To assess the anxiety among Chronic Kidney Disease patients undergoing hemodialysis.
2. To assess the Quality Of Life among Chronic Kidney Disease patients undergoing hemodialysis.
3. To evaluate the effectiveness of Progressive Muscle Relaxation Therapy on anxiety and Quality Of Life among Chronic Kidney Disease patients undergoing hemodialysis.
4. To determine the association of the anxiety and Quality Of Life of Chronic Kidney Disease patients undergoing hemodialysis with selected demographic variables.

HYPOTHESES

H₁: There is significant difference in the mean pre test and mean post test score of anxiety and QOL in experimental group.

H₂: There is significant difference in the mean post test scores of anxiety and QOL in experimental and control group.

H₃: There is significant association of anxiety score and QOL score with selected demographic and clinical variables

To assess whether research hypotheses supported or not supported following null hypotheses stated:

H₀₁: There is no significant difference in the mean pre test and mean post test score of anxiety and QOL in experimental group

H₀₂: There is no significant difference in the mean post test scores of anxiety and QOL in experimental and control group.

H₀₃: There is no significant association of anxiety score and QOL score with selected demographic and clinical variables

LITERATURE REVIEW

Review of Literature

According to ANA, Review of literature is one of the most important step in the research process. It is an account of already known about a particular phenomenon. A literature review is a body of text that aims to review the critical points of knowledge on a particular topic of research¹⁹.

Review of literature is organized under following sections:-

Section A- Literature related to prevalence of chronic kidney disease.

Section B- Literature related to anxiety among chronic kidney disease patients.

Section C- Literature related to quality of life among chronic kidney disease patients.

Section D- Literature related to effectiveness of Progressive Muscle Relaxation Therapy (PMRT) on anxiety and Quality Of Life (QOL) among chronic kidney disease patients and other disease conditions

RESEARCH DESIGN

Quasi experimental (non-equivalent control group pre-test post-test) design was adopted for the present study.

| | | | |
|---|----------------|---|----------------|
| E | O ₁ | X | O ₂ |
| C | O ₃ | - | O ₄ |

Figure 2: Schematic representation of research design

E= Experimental group

C= control group

O₁= observation of anxiety and quality of life at pre test of experimental group.

O₂= observation of anxiety and quality of life at post test of experimental group

O₃= observation of anxiety and quality of life at pre test of control group.

O₄= observation of anxiety and quality of life at post test of control group.

X= Administration of Progressive Muscle Relaxation Therapy (PMRT)

= No intervention

TARGET POPULATION

The patients diagnosed as having Chronic Kidney Disease & undergoing hemodialysis.

SELECTION & DEVELOPMENT OF TOOL

Steps involved in the development of Demographic and clinical Performa and lesson plan of PMRT are as follow:

1. Development of criteria checklist
2. Content validation (Appendix- V)
3. Preparation of final tool

Standardized tools i.e. State Trait Anxiety Index (STAI), WHO-BREF questionnaires were used to collect the data from the Chronic Kidney Disease patients undergoing hemodialysis.

The tools were translated into Punjabi language before being administrated to subjects.

ANALYSIS AND INTERPRETATION OF DATA

The data was analyzed and presented under the following section:

Section A: Description of sample characteristics based on demographic and clinical performa

Section B: Description of existing anxiety and Quality Of Life (QOL) of Chronic Kidney Disease (CKD) patients undergoing hemodialysis.

Section C: Effectiveness of Progressive Muscle Relaxation Therapy (PMRT) in reducing anxiety and improving QOL.

1. Comparison of pretest and post test score of experimental group
2. Comparison of post test scores of experimental and control group

Section D: Association of anxiety & QOL with selected demographic & clinical variables.

SECTION –A DESCRIPTION OF SAMPLE CHARACTERISTICS

This section describes the sample characteristics in terms of frequency and percentage. This section also deals with homogeneity of sample in experimental and control group.

Table 1: Frequency and percentage distribution of sample characteristics and computed χ^2 value

N=20+20=40

| Demographic and clinical variables | Experimental group f (%) | Control group f (%) | χ^2 |
|---|--------------------------|---|---------------------|
| 1. Age in years | | | |
| 1.1 30 – 40 | 7 (35) | 8(40) | |
| 1.2 41 – 50 | 3 (15) | 3 (15) | |
| 1.3 51 – 60 | 7 (35) | 6 (30) | 0.144 ^{NS} |
| 1.4 61 – 70 | 3 (15) | 3 (15) | |
| Mean age \pmSD= 48.50(\pm12.775) | | Mean age \pmSD= 48.25(\pm14.194) | |
| 2. Gender | | | |
| 2.1 Male | 15 (75) | 17(85) | 0.156 ^{NS} |
| 2.2 Female | 5 (25) | 3(15) | |
| 3. Marital Status | | | |
| 3.1 Married | 20 (100) | 20 (100) | |
| 3.2 Unmarried | 0 | 0 | |
| 3.3 Separated | 0 | 0 | NA |
| 3.4 Divorced | 0 | 0 | |
| 3.5 Widow | 0 | 0 | cont..... |

Table 1: Frequency and percentage distribution of sample Characteristics and computed χ^2 values

| Demographic and clinical variables | Experimental group f (%) | Control group f (%) | χ^2 cont'd... |
|------------------------------------|--------------------------|---------------------|---------------------|
| Habitat | | | |
| Rural | 12(60) | 12(60) | 0.104 ^{NS} |
| Urban | 8(40) | 8(40) | |
| Educational status | | | |
| Up to primary | 3 (15) | 1 (5) | |
| Metric | 12 (60) | 14 (70) | 1.630 ^{NS} |
| Senior secondary | 4 (20) | 3 (15) | 5.4 |
| Graduate & above | 1(5) | 2(10) | 5.3 |
| Employment status | | | |
| Unemployed | 15 (75) | 16(80) | 0.000 ^{NS} |
| Employed | 5 (25) | 4(20) | |
| Type of family | | | |
| Joint | 8(40) | 5(25) | 0.456 ^{NS} |
| Nuclear | 12(60) | 15(75) | |
| Religion | | | |
| Hindu | 5(25) | 5(25) | 0.133 ^{NS} |
| Muslim | 0 | 0 | |

| | | | |
|-----------|--------|--------|--|
| Sikh | 15(75) | 15(75) | |
| Christian | 0 | 0 | |
| Any Other | 0 | 0 | |

cont'd.....

Table 1: Frequency and percentage distribution of sample characteristics and computed χ^2 value

| Demographic and clinical variables | Experimental group f (%) | Control group f (%) | χ^2 cont'd... |
|---|--------------------------|---------------------|---------------------|
| Total Income Per Month | | | |
| Less than 5000 | 4(20) | 4(10) | 2.445 ^{NS} |
| 5000-10000 | 10(50) | 14(70) | |
| 10001-15000 | 1(5) | 0 | |
| More than 15000 | 5(25) | 4(20) | |
| When were you diagnosed as having Chronic Kidney Disease | | | |
| Less than 1 Year | 0 | 0 | 0 |
| 1-5 Year | 20(100) | 20(100) | NA |
| 6-10 Year | 0 | 0 | 0 |
| More than 10 Year | 0 | 0 | 0 |
| From how much duration you are going haemodialysis | | | |
| <6 Months | 0 | 0 | |
| 6-12 Months | 0 | 0 | |
| >12 Months | 20(100) | 20(100) | NA |
| Do you have any knowledge regarding Progressive Muscle Relaxation Therapy (PMRT) | | | |
| Yes | 0 | 0 | NA |
| No | 20(100) | 20(100) | |

NS= Not Significant NA= Not Applicable

- ❖ Table 1 show that the most of subjects in the experimental group (35%) and control group (40%) belonged to the age group 30-40 years. The mean age experimental and control group was 48.50(±12.77) and 48.25(±14.19) respectively.
- ❖ Maximum subjects in experimental group (75%) and control group (85%) were male.
- ❖ All subjects in experimental group and control group were married.
- ❖ Sixty percentages of subjects were belonged to rural area in both experimental group and control group.
- ❖ The greater part of subjects educational status in experimental group (60%) and in control group (70%) was metric.
- ❖ Maximum subjects in experimental group (75%) and control group (80%) was unemployed.
- ❖ The majority of samples in experimental group (60%) and control group (75%) were having nuclear families.
- ❖ Seventy five percentages of subjects belongs to Sikh religion in both experimental group and control group.
- ❖ Most of the subjects in experimental group (50%) and control group (70%) had income in the range 5000-10,000 rupees per month.
- ❖ All subjects in experimental group and control group were diagnosed as having CKD from last-1-5years and undergone hemodialysis more than 12 months and they did not had any knowledge regarding PMRT.
- ❖ Table 1 also shows the computed χ^2 value to determine homogeneity of experimental and control group, there was no significant difference between two groups in demographic and clinical variables.

SECTION-B: DESCRIPTION OF EXISTING ANXIETY AND QOL OF CKD PATIENTS UNDERGOING HEMODIALYSIS

This section deals with existing anxiety and QOL of CKD patients undergoing hemodialysis in term of range, mean, and Standard Deviation (SD) of Experimental group and Control group

Table - 2: Range, Mean, and SD of existing anxiety and QOL of CKD patients undergoing hemodialysis in Experimental group and Control group

N= 20+20=40

| GROUP | Variable | Range | Mean | SD |
|--------------|---------------|-------|-------|-------|
| Experimental | State anxiety | 48-80 | 65.65 | 8.462 |
| | Trait anxiety | 50-82 | 69.25 | 8.896 |
| | QOL | 55-78 | 68.55 | 6.236 |
| Control | State anxiety | 58-84 | 68.85 | 7.118 |
| | Trait anxiety | 62-84 | 69.90 | 6.398 |
| | QOL | 55-84 | 68.50 | 7.550 |

❖ **Table 2,** shows that score of existing state anxiety, trait anxiety and QOL in experimental group was in the range 48-80, 50-82 and 55-78 respectively. Data in table 2 also shows that the mean score (\pm SD) of state anxiety, trait anxiety and QOL in experimental group was 65.65(\pm 8.462), 69.25(\pm 8.896), and 68.55(\pm 6.236) respectively.

❖ **Table 2,** reveals that score of existing state anxiety, trait anxiety and QOL in control group was in the range 58-84, 62-84 and 55-84 respectively. Data in table 2 also shows that the mean score (\pm SD) of state anxiety, trait anxiety and QOL in experimental group was 68.85(\pm 7.118), 69.90(\pm 6.398), and 68.50(\pm 7.550) respectively.

SECTION C: EFFECTIVENESS OF PMRT IN REDUCING ANXIETY AND IMPROVING QOL

This section deals with the effectiveness of PMRT in reducing anxiety and improving QOL of CKD patients undergoing hemodialysis.

(1) Comparison of pretest and post test score of experimental group

This section deals with the comparison of pre- test and post test score of experimental group in terms of mean (\pm SD) and mean difference and ‘t’ value. In order to determine the statistical inference paired ‘t’ test was computed. The following null hypothesis stated;

H₀₁: There is no significant difference in the mean pretest and mean post test score of anxiety and QOL in experimental group

H₁: There is significant difference in the mean pretest and mean post test score of anxiety and QOL in experimental group.

Table 3: Mean (\pm SD) and Mean difference and ‘t’ value of experimental group.

N=20

| Variables | Mean(\pm SD) | | Mean difference | ‘t’ value |
|---------------|---------------------|----------------------|-----------------|-----------|
| | Pre test | Post test | | |
| State anxiety | 65.65(8.462) | 48.15(\pm 8.158) | 17.5 | 11.109* |
| Trait anxiety | 69.25(\pm 8.896) | 50.30(\pm 10.378) | 18.95 | 14.053* |
| QOL | 68.55(\pm 6.236) | 98.90(\pm 11.912) | 30.35 | 15.764* |

‘t’₁₉= 2.093, p<0.05

***= significant**

❖ **Table 3:** shows that state anxiety mean pre test and post test score of experimental group was 65.65(\pm 8.462) and 48.15(\pm 8.158) respectively with mean difference of 17.5, It reveals the effectiveness of PMRT in reducing the state anxiety. The calculated ‘t’ value (t₁₉= 11.109) was greater than the table value at 0.05 level of significance hence the null

hypothesis (H_{01}) is

- ❖ rejected and inferred that findings are statistically significant.
- ❖ Table 3: shows that trait anxiety mean pre test and post test scores of experimental group was $69.25(\pm 8.896)$ and $50.30(\pm 10.378)$ respectively with mean difference of 18.95, It reveals the effectiveness of PMRT in reducing the trait anxiety. The calculated 't' value ($t_{19} = 14.053$) was greater than the table value at 0.05 level of significance. Hence null hypothesis (H_{01}) is rejected and inferred that findings are statistically significant
- ❖ Table 3: shows that QOL mean pre test and post test scores of experimental group was $68.55(\pm 6.236)$ and $98.90(\pm 11.912)$ respectively with mean difference of 30.35, It reveals the effectiveness of PMRT in improving the QOL. The calculated 't' value ($t_{19} = 15.764$) was greater than the table value at 0.05 level of significance. hence null hypothesis (H_{01}) is rejected and inferred that findings are statistically significant

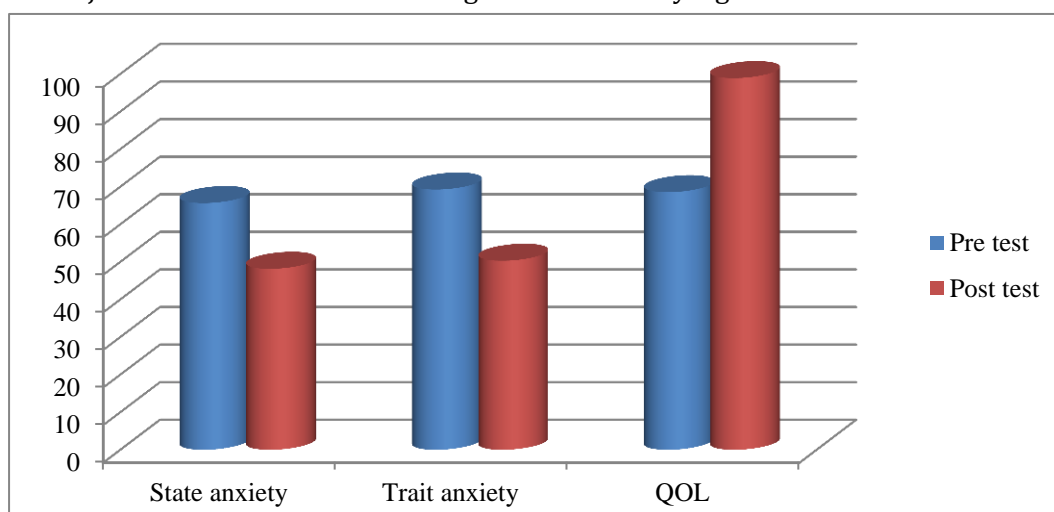


Fig 4. Cylindrical diagram representing the Mean Pre test Post test score of experimental group. This diagram shows the mean pre test and post test comparison of state anxiety trait anxiety and quality of life of experimental group. It shows that PMRT is effective to reduce state anxiety & trait anxiety and improve quality of life.

(2) Comparison of post test scores of experimental and control group

This section deals with the comparison of post test scores of experimental group and control group in terms of mean (\pm SD), mean difference and 't' value.

In order to determine the statistical inference unpaired 't' test was computed. The following null hypothesis stated;

H_{02} : There is no significant difference in the mean post test scores of anxiety and QOL in experimental and control group.

H_2 : There is significant difference in the mean post test scores of anxiety and QOL in experimental and control group.

Table- 4: Mean (\pm SD), mean difference and 't' value of post test anxiety and QOL scores of experimental and control group

N=20+20

| Variables | Post test scores , mean(\pm SD) | | Mean difference | 't' value |
|---------------|------------------------------------|---------------------|-----------------|-----------|
| | Experimental group | Control group | | |
| State anxiety | 48.15(\pm 8.158) | 70.80(\pm 7.466) | 22.650 | 3.566* |
| Trait anxiety | 50.30(\pm 10.378) | 72.95(\pm 4.925) | 22.650 | 3.566* |

| | | | | |
|-----|----------------|------------|--------|--------|
| QOL | 98.90(±11.912) | 67(±7.384) | 31.900 | 3.566* |
|-----|----------------|------------|--------|--------|

$t_{38} = 2.025$, $p < 0.05$: * = significant

- ❖ Table 5, shows the mean post test state anxiety scores of experimental and control group was 48.15(±8.158) and 70.80(±7.466) respectively with mean difference 22.650, it reveal the effectiveness of PMRT in reducing state anxiety. The calculated 't' value 3.566 was greater than the table value ($t_{38}=2.025$) at 0.05 level of significance, hence null hypothesis (H_{02}) is rejected and inferred that findings are statistically significant.
- ❖ The mean post test trait anxiety scores of experimental and control group was 50.30(±10.378) and 72.95(±4.925) respectively with mean difference 22.650, it reveal the effectiveness of PMRT in reducing trait anxiety. The calculated 't' value 3.566 ($t_{38}=2.025$) was greater than the table value ($t_{38}=2.025$) at 0.05 level of significance, hence null hypothesis (H_{02}) is rejected and inferred that findings are statistically significant.
- ❖ The mean post test QOL scores of experimental and control group was 98.90(±11.912) and 67(±7.384) respectively with mean difference 31.900, it reveal effectiveness the of PMRT in improving QOL. The calculated 't' value 3.566 ($t_{38}=2.025$) was greater than the table value ($t_{38}=2.025$) at 0.05 level of significance, hence null hypothesis (H_{02}) is rejected and inferred that findings are statistically significant.

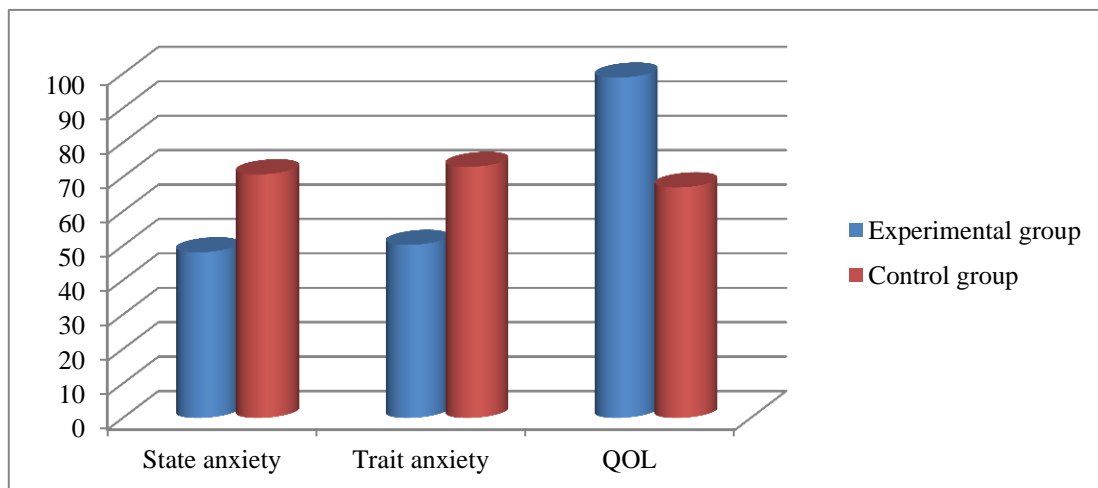


Fig 5. Cylindrical diagram representing the mean post test State anxiety, Trait anxiety and QOL score of experimental and control group

SECTION- D: ASSOCIATION OF ANXIETY, QOL WITH DEMOGRAPHIC AND CLINICAL VARIABLES

This section deals with finding association of anxiety scores, QOL scores with demographic and clinical variables. Chi square (χ^2) was computed to determine the association of anxiety scores, QOL scores with demographic and clinical variables (age, sex, education status, employment status and income). The following null hypothesis was stated that:

- H_{03} : There is no significant association of anxiety score and QOL score with selected demographic and clinical variables
- H_3 : There is significant association of anxiety score and QOL score with selected demographic and clinical variables

Table-5: χ^2 value showing association of anxiety score and QOL score with selected demographic and clinical variables

N=20+20=40

| Variables | Demographic and clinical variables | | | | | | | | | |
|---------------|------------------------------------|---------------------|----------|---------------------|------------------|---------------------|-------------------|---------------------|----------|---------------------|
| | Age | | Sex | | Education status | | Employment status | | Income | |
| | df(p) | χ^2 | df(p) | χ^2 | df (p) | χ^2 | df(p) | χ^2 | df(p) | χ^2 |
| State anxiety | 3(0.410) | 2.886 ^{NS} | 1(0.648) | 0.208 ^{NS} | 3(0.506) | 2.335 ^{NS} | 1(0.827) | 0.048 ^{NS} | 3(0.828) | 0.889 ^{NS} |
| Trait anxiety | 3(0.667) | 1.567 ^{NS} | 1(0.693) | 0.156 ^{NS} | 3(0.804) | 0.989 ^{NS} | 1(0.449) | 0.573 ^{NS} | 3(0.504) | 2.346 ^{NS} |
| QOL | 3(0.042) | 8.203* | 1(0.095) | 2.784 ^{NS} | 3(0.110) | 6.027 ^{NS} | 1(0.676) | 0.175 ^{NS} | 3(0.214) | 4.478 ^{NS} |

NS= Not Significant *= significant

Table 6, shows that there was a significant association of QOL and age. The calculated chi square ($\chi^2= 8.203$) was greater than the table value ($\chi^2= 7.815$) at 0.05 level of significance. Data in table 6 also shows that for other variable no significant association was found ($p>0.05$).

DISCUSSION

This study intends to find the effectiveness of PMRT the anxiety and improve QOL among CKD patients undergoing hemodialysis. The overall experience was a satisfying one.

SAMPLE CHARACTERISTICS BASED ON DEMOGRAPHIC AND CLINICAL PERFORMA

The results of present study revealed that the age of subjects in the two groups (experimental group 35% and control group 40%) was in the range 30-40 years. Maximum subjects in the two group (experimental group 75% and control group 85%) were male. All subject in both group were married and 60% subject in both group belonged to rural area.

The level of education showed that major of subjects in the two groups (60% in experimental group and 70% in control group) was matric. Majority of subjects (75% in experimental group and 80% in control group) was unemployed. The majority of samples in experimental group (60%) and control group (75%) were having nuclear families. Seventy five percentage of subjects belongs to Sikh religion in both group. Most of subjects in experimental group (50%) and control group (70%) had income in the range 5000-10,000 Rupees per month. All subjects in both groups were diagnosed as having CKD from last 1-5 years and undergone hemodialysis more than 12 months and they did not have any knowledge regarding PMRT. There were no significant differences between two groups in demographic and clinical variables.

Few findings were consistent with Dehdari et al (2007), mention that in the control group 69% patient were male. In the experimental group 74.5% were male. Only 41.3% of patient were employed in two group. Majority of patient (81.8% in control group and 92.7% in relaxation group) were married. There were no significant differences between the two groups in socio demographic variables⁴⁰.

EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY (PMRT) ON ANXIETY AND QUALITY OF LIFE (QOL)

The results of the present study revealed that the state anxiety mean pre test and post test score of experimental group was 65.65(± 8.462) and 48.15(± 8.158) respectively with mean difference of 17.5, It reveals the effectiveness of PMRT in reducing the state anxiety. Results indicated that there was significant lower post test state anxiety ($p<0.05$) compared to the pre test state anxiety. The trait anxiety mean pre test and post test scores of experimental group was

69.25(± 8.896) and 50.30(± 10.378) respectively with mean difference of 18.95, It reveals the effectiveness of PMRT in reducing the trait anxiety. Result indicated that there was significant lower post test trait anxiety ($p < 0.05$) compared to the pre test trait anxiety.

These findings are in agreement with Dehdari et al (2007), who found that state anxiety mean before intervention and after intervention score of relaxation group was 50.7 \pm 8.6 and 34.9 \pm 1.4 respectively and the results were statistically significant ($p < 0.01$). The mean trait anxiety before intervention and after intervention score of relaxation group was 49.6 \pm 9.1 and 38 \pm 1.2 respectively and the results were statistically significant ($p < 0.01$)⁴⁰.

The overall QOL mean pre test and post test scores of experimental group was 68.55(± 6.236) and 98.90(± 11.912) respectively with mean difference of 30.35, It reveals the effectiveness of PMRT in improving the QOL. Result indicated that there was significant lower post test QOL score ($p < 0.05$) compared to the pre test QOL score. These findings are supported by study conducted by Dehdari et al (2007) who found that there was significant difference in all domains of QOL before and after intervention in relaxation group ($p < 0.01$)

The mean post test state anxiety scores of experimental and control group was 48.15(± 8.158) and 70.80(± 7.466) respectively with mean difference 22.650, it reveal the effectiveness of PMRT in reducing state anxiety. Results indicated that the experimental group reported a significant lower state anxiety level ($p < 0.05$) compared to control group. The mean post test trait anxiety scores of experimental and control group was 50.30(± 10.378) and 72.95(± 4.925) respectively with mean difference 22.650, it reveal the effectiveness of PMRT in reducing trait anxiety. Results indicated that the experimental group reported a significant lower trait anxiety level ($p < 0.05$) compared to control group. The mean post test QOL scores of experimental and control group was 98.90(± 11.912) and 67(± 7.384) respectively with mean difference 31.900, it reveal effectiveness the of PMRT in improving QOL. Results indicated that the experimental group reported a significant higher QOL ($p < 0.05$) compared to control group.

These findings are agreement with Dehdari et al (2007), who found that relaxation group reported a significantly lower state anxiety ($p < 0.01$) and trait anxiety level ($p < 0.01$) compared to the control group after intervention. Also all domains of QOL in the relaxation group were significantly more compared to the control group after intervention.

ASSOCIATION OF ANXIETY AND QOL SCORES & SELECTED DEMOGRAPHIC VARIABLES

This study revealed that there was a significant association of QOL & age ($p < 0.05$).

These findings congruent with a study conducted by Samini et al (2001). The finding shows that there was a significant association of age and income with anxiety level and of age and income with QOL⁴¹.

CONCLUSION

The present study was undertaken to evaluate the effectiveness of PMRT to reduce the anxiety and QOL among CKD patients undergoing hemodialysis. According to the results of this study progressive muscle relaxation has a favorable effect to reduce anxiety and improve QOL of CKD patients undergoing hemodialysis. PMR training is simple, easy to learn and easy to practice. This can be well adopted by people. In conclusion, adding PMR therapy to dialysis unit may improve psychological outcomes of patients with anxiety and hence improve QOL.

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