

## EFFECTIVENESS OF INTRADIALYTIC LEG EXERCISE ON POST DIALYTIC WELL-BEING AMONG PATIENTS UNDERGOING HAEMODIALYSIS AT SELECTED HOSPITAL, KOLLAM.

### Nursing

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### ABSTRACT

**Introduction:** Patients undergoing haemodialysis have significantly reduced physical capacity and run a high risk of developing complications. Intra-dialytic leg exercise is a beneficial exercise intervention that improves physical fitness and haemodialysis efficiency. It also reduces fatigue and has beneficial effects on inflammation status, psychological status, and health-related quality of life. Post dialytic well-being is essential to improve the quality of life in haemodialysis patients.

#### Materials and Methods:

- **Research approach and design:** Quantitative research approach with quasi experimental, pretest posttest control group design.
- **Sampling technique:** Purposive sampling technique was used for the selection of samples.
- **Sample:** Sample consist of 60 haemodialysis patients from Bishop Benziger Hospital, 30 in experimental group and 30 in control group.
- **Tool:** It consists of demographic proforma of patients and well-being scale to assess the post dialytic well-being among patients undergoing haemodialysis.

**Result:** The data were analysed using descriptive and inferential statistics based on hypotheses of the study. The findings of the study revealed that the mean posttest well-being score in the experimental group (54.20) was higher than the mean posttest well-being score (29.77) in the control group. The calculated 't' value (16.12) was greater than the table value (2.00) at a 0.05 level of significance. This indicated that there was a statistically significant difference between the mean posttest well-being scores in the experimental and control group among patients undergoing haemodialysis.

The association between the pretest well-being score among patients undergoing hemodialysis and demographic variables such as age in years, gender, occupation, level of activity, history of illness, duration of illness, blood pressure and extreme tiredness were computed using chi square test. As the calculated chi square value for all the variables were less than the table value there was no significant association between pretest well-being score among patients undergoing haemodialysis and the demographic variables.

**Conclusion:** The present study was done to assess the effectiveness of intradialytic leg exercise on post dialytic well-being among patients undergoing haemodialysis at selected hospital, Kollam. The present study proved that intradialytic leg exercise was effective in improving the post dialytic well-being among patients undergoing haemodialysis.

### KEYWORDS

Intradialytic leg exercise, Post dialytic well-being, Patients, Haemodialysis, selected hospital.

### INTRODUCTION

Exercise therapy during dialysis is currently being recommended since it is easy for patients to follow and there is maximum cooperation from patients. As per the Mathrubhumi Daily report on 29th April 2018, there are about 2.5 lakh kidney patients in Kerala. About one lakh dialyses are conducted in the state in one year. Haemodialysis patients find it very hard to put in words how they experience during haemodialysis. Exercise or regular physical activities should be mandatory, not optional, in patients with End Stage Renal Disease. Intra-dialytic leg exercise is a beneficial exercise intervention that improves physical fitness and haemodialysis efficiency. Post dialytic well-being is essential to improve the quality of life in haemodialysis patients.

### MATERIALS AND METHODS

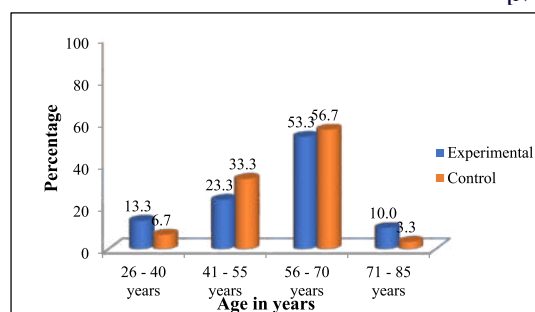
Quantitative approach with quasi experimental, pretest posttest control group design was used in the study. The study was conducted in artificial kidney unit of Bishop Benziger Hospital, Kollam. The data collection period was from 2-12-2019 to 28-12-2019. Clearance certificate was obtained from the institutional ethics committee of Bishop Benziger College of Nursing, Kollam. A formal permission was obtained from the administrator of the selected hospital before data collection. A total of 60 samples were selected for study, 30 in experimental and 30 in control group. Samples were selected using purposive sampling method. The researcher introduced herself to the sample and gave a brief introduction about the study and a written informed consent was obtained from the haemodialysis patients. Baseline data was collected from the participants. Pretest was conducted after 15 minutes of initiation of dialysis for the experimental and control group patients undergoing haemodialysis using well-being Scale. The investigator assisted the patients in doing intradialytic leg exercise for the experimental group after pretest. Second session of exercise was performed one and half hours after the completion of the 1st exercise session. Routine care was given to the control group. Posttest was conducted after 15 minutes of completion of the dialysis session for both the experimental and control group patients. The data

collection was terminated by thanking the respondents for their co-operation. The data collected were compiled for analysis.

### RESULTS

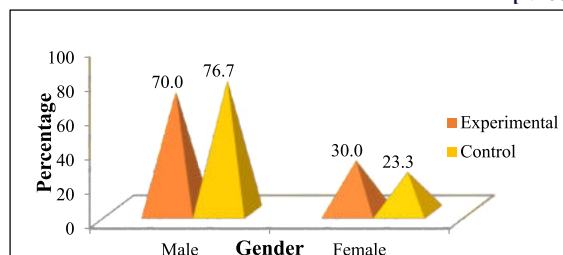
#### Graphical Representation of Demographic Variables

[N=60]



**Figure 1: Percentage wise distribution of the samples according to age in experimental and control group.**

[N=60]



**Figure 2: Percentage wise distribution of samples according to gender in experimental and control group.**

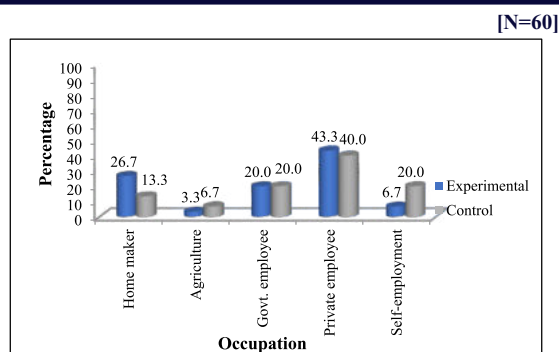


Figure 3: Percentage wise distribution of samples according to occupation.

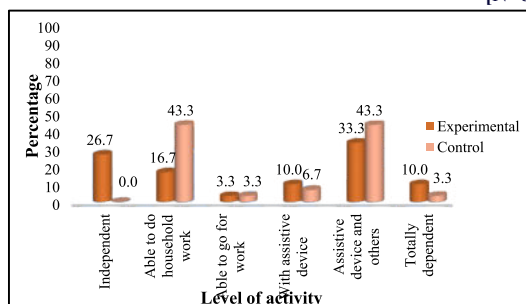


Figure 4: Percentage wise distribution of samples according to the level of activity.

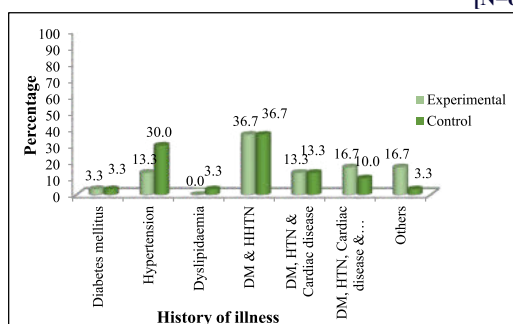


Figure 5: Percentage wise distribution of sample according to history of illness.

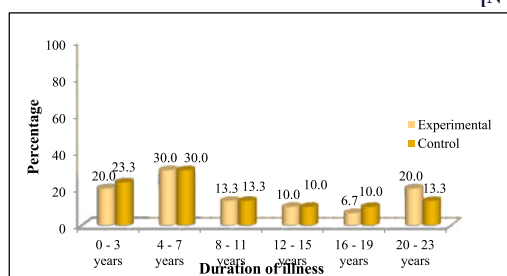


Figure 6: Percentage wise distribution of samples according to duration of illness.

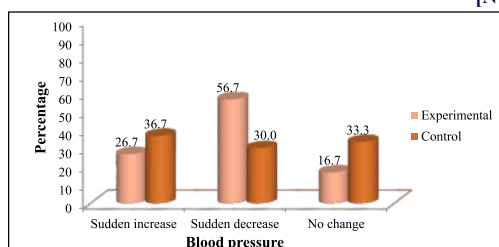


Figure 7: Percentage wise distribution of samples according to the change in blood pressure

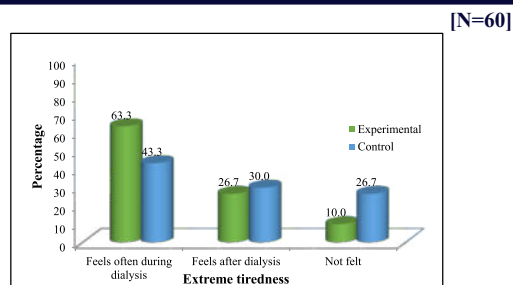


Figure 8: Percentage wise distribution of samples according to level of tiredness.

Table 1: Frequency and percentage distribution of well-being scores among patients undergoing haemodialysis in experimental group.

[n=30]

| Level of Well-being score | Pretest   |            | Posttest  |            |
|---------------------------|-----------|------------|-----------|------------|
|                           | Frequency | Percentage | Frequency | Percentage |
| Low                       | 10        | 33.3%      | 0         | 0.0%       |
| Moderate                  | 20        | 66.7%      | 7         | 23.3%      |
| High                      | 0         | 0.0%       | 23        | 76.7%      |

Table 2: Frequency and percentage distribution of well-being scores in control group.

[n=30]

| Level of Well-being score | Pretest   |            | Posttest  |            |
|---------------------------|-----------|------------|-----------|------------|
|                           | Frequency | Percentage | Frequency | Percentage |
| Low                       | 8         | 26.7%      | 7         | 23.3%      |
| Moderate                  | 22        | 73.3%      | 23        | 76.7%      |
| High                      | 0         | 0.0%       | 0         | 0.0%       |

Section B: Evaluation of effectiveness of intradialytic leg exercise on post dialytic well-being among patients undergoing haemodialysis.

Table 3: Mean, standard deviation and 't' value of pretest and posttest well-being score in experimental and control group.

[n=30]

|                           | Mean  | Standard deviation | t' value |
|---------------------------|-------|--------------------|----------|
| <b>Experimental group</b> |       |                    |          |
| Pretest                   | 30.10 | 5.73               | 14.19    |
| Posttest                  | 54.20 | 7.50               |          |
| <b>Control group</b>      |       |                    |          |
| Pretest                   | 28.70 | 3.70               | 2.14     |
| Posttest                  | 29.77 | 3.56               |          |

Tabulated t (29) = 2.05

Table 4: Mean, standard deviation and t value of posttest well-being score in experimental and control group.

(N=60)

|                    | Mean  | Standard deviation | t value |
|--------------------|-------|--------------------|---------|
| Experimental group | 54.20 | 7.50               | 16.12   |
| Control group      | 29.77 | 3.56               |         |

Tabulated t (58) = 2.00

Section C: Association between pretest well-being scores and selected demographic variables.

Table 5: Chi square value showing association of pretest well-being scores and selected demographic variables.

(N=60)

| Sl. No | Demographic Variables | Well-being Scores |          |      | Chi-square | Df | Table Value | Level of Significance |
|--------|-----------------------|-------------------|----------|------|------------|----|-------------|-----------------------|
|        |                       | Low               | Moderate | High |            |    |             |                       |
| 1.     | Age in years          |                   |          |      |            |    |             |                       |
|        | a. 11-25              | 0                 | 0        | 0    | 3.79       | 3  | 7.82        | NS                    |
|        | b. 26-40              | 3                 | 3        | 0    |            |    |             |                       |
|        | c. 41-55              | 7                 | 10       | 0    |            |    |             |                       |
|        | d. 56-70              | 9                 | 24       | 0    |            |    |             |                       |
|        | e. 71-85              | 0                 | 4        | 0    |            |    |             |                       |

|    |                                                           |    |    |   |       |   |       |    |
|----|-----------------------------------------------------------|----|----|---|-------|---|-------|----|
| 2. | <b>Gender</b>                                             |    |    |   |       |   |       |    |
|    | a. Male                                                   | 13 | 31 | 0 | 0.02  | 1 | 3.84  | NS |
|    | b. Female                                                 | 5  | 11 | 0 |       |   |       |    |
| 3. | <b>Occupation</b>                                         |    |    |   |       |   |       |    |
|    | a. Home Maker                                             | 3  | 9  | 0 | 0.825 | 4 | 9.49  | NS |
|    | b. Agriculture                                            | 1  | 2  | 0 |       |   |       |    |
|    | c. Govt Employee                                          | 3  | 9  | 0 |       |   |       |    |
|    | d. Private Employee                                       | 9  | 16 | 0 |       |   |       |    |
|    | e. Self-Employed                                          | 2  | 6  | 0 |       |   |       |    |
| 4. | <b>Level of Activity</b>                                  |    |    |   |       |   |       |    |
|    | a. Independent                                            | 3  | 5  | 0 | 5.28  | 5 | 11.07 | NS |
|    | b. Able to do household work                              | 5  | 13 | 0 |       |   |       |    |
|    | c. Able to go for work                                    | 1  | 1  | 0 |       |   |       |    |
|    | d. With assistive device                                  | 3  | 2  | 0 |       |   |       |    |
|    | e. Assistance of others                                   | 4  | 19 | 0 |       |   |       |    |
|    | f. Assistive device and others                            | 2  | 2  | 0 |       |   |       |    |
|    | g. Totally dependent                                      | 0  | 0  | 0 |       |   |       |    |
| 5. | <b>History of illness</b>                                 |    |    |   |       |   |       |    |
|    | a. Diabetes Mellitus                                      | 1  | 1  | 0 | 2.53  | 6 | 12.59 | NS |
|    | b. Hypertension                                           | 4  | 9  | 0 |       |   |       |    |
|    | c. Cardiac disease                                        | 0  | 0  | 0 |       |   |       |    |
|    | d. Dyslipidemia                                           | 0  | 1  | 0 |       |   |       |    |
|    | e. Diabetes and Hypertension                              | 8  | 14 | 0 |       |   |       |    |
|    | f. Diabetes, Hypertension & Cardiac disease               | 1  | 7  | 0 |       |   |       |    |
|    | g. Diabetes, Hypertension, Cardiac disease & Dyslipidemia | 2  | 6  | 0 |       |   |       |    |
|    | h. Others                                                 | 2  | 4  | 0 |       |   |       |    |
| 6. | <b>Duration of illness</b>                                |    |    |   |       |   |       |    |
|    | a. 0-3 years                                              | 3  | 10 | 0 | 2.61  | 5 | 11.07 | NS |
|    | b. 4-7 years                                              | 5  | 13 | 0 |       |   |       |    |
|    | c. 8-11 years                                             | 2  | 6  | 0 |       |   |       |    |
|    | d. 12-15 years                                            | 2  | 4  | 0 |       |   |       |    |
|    | e. 16-19 years                                            | 3  | 2  | 0 |       |   |       |    |
|    | f. 20-23 years                                            | 3  | 7  | 0 |       |   |       |    |
| 7. | <b>Blood Pressure</b>                                     |    |    |   |       |   |       |    |
|    | a. Sudden Increase                                        | 5  | 14 | 0 | 0.209 | 2 | 5.99  | NS |
|    | b. Sudden Decrease                                        | 8  | 18 | 0 |       |   |       |    |
|    | c. No Change                                              | 5  | 10 | 0 |       |   |       |    |
| 8. | <b>Extreme Tiredness</b>                                  |    |    |   |       |   |       |    |
|    | a. Feels often during dialysis                            | 11 | 21 | 0 | 1.03  | 2 | 5.99  | NS |
|    | b. Feels after dialysis                                   | 5  | 12 | 0 |       |   |       |    |
|    | c. Not felt                                               | 2  | 9  | 0 |       |   |       |    |

Significant at 0.05 level    NS Non-Significant    S Significant

## DISCUSSION

The findings of the present study showed a significant difference in the posttest well-being scores of patients undergoing haemodialysis in the experimental and control group. This result indicated that the intradialytic leg exercise was effective in improving the post dialytic well-being among patients undergoing haemodialysis.

The findings of the present study were supported by a study conducted to find out the effectiveness of intra-dialytic cycling on the physical and psychological well-being of patients undergoing haemodialysis. In both the studies researcher used purposive sampling technique. In the present study researcher selected 60 samples while in the reference study, data were collected until saturation was attained. In the reference study the data collection was accomplished by audiotaped, semi structured interviews of duration 30–90 minutes, which were transcribed verbatim while in the present study well-being scale was used. In the reference study, the implementation of intra-dialytic cycling was experienced as positive, as it had beneficial effects on physical and psychological well-being. The present study also concluded that the intradialytic leg exercise was effective in improving the post dialytic well-being among patients undergoing haemodialysis. The findings of the present study was also supported by another study conducted to determine the impact of an 8-week intradialytic exercise program (consisting of 15 minutes low-intensity exercise during the first 2 hours of dialysis) on dialysis efficacy among haemodialysis patients. Randomised control design was used in the reference study

while quasi-experimental pretest posttest control group design was used in the present study. A total of 50 clinically stable haemodialysis patients were enrolled in the reference study and randomly allocated into two groups: the aerobic exercise group (n=25) and the control group (n=25). In the present study 60 haemodialysis patients who fulfilled the inclusion and exclusion criteria were selected, 30 in experimental and 30 in control group. Findings of both studies revealed that the mean posttest well-being scores of haemodialysis patients in the experimental group was significantly higher than the mean pretest well-being score of haemodialysis patients in the control group. The selected intervention (intradialytic leg exercise) was effective for haemodialysis patients in both the studies.

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