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EFFECTIVENESS OF INTRADIALYTIC STRETCHING EXERCISE ON MUSCLE CRAMPS AMONG PATIENTS UNDERGOING HAEMODIALYSIS AT SELECTED HOSPITALS

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ABSTRACT

An experimental study was done to evaluate the effectiveness of Intradialytic stretching exercise on muscle cramps among patients undergoing haemodialysis at selected hospitals, Salem. Quasi experimental pre test post test with control group design was used for this study. sixty patients were selected through Non Probability Purposive Sampling Technique. Among them 30 patients from Salem Gopi hospital were selected for experimental group and 30 patients from VIMS Hospital, seeragapadi were selected for control group. Pre test score of Muscle cramps were assessed by using Modified Penn Spasm Frequency scale in experimental and control group. The investigator performed Intradialytic stretching exercises for experimental group during dialysis. No intervention was given to control group. Post test was done on the third sittings by using the same scale. The findings revealed that in pre test 8(26.66%) patients in experimental group and 11(36.67%) patients in control group had severe muscle cramps whereas in post test 24(80%) patients in experimental group had no muscle cramps and 14(46.67%) patients in control group had moderate muscle cramps. In experimental group the pre test and post test mean score was 6.5 ± 2.2 and 0.8 ± 2 respectively. The calculated 't' value 13.25 which was greater than the table value. Hence the hypothesis H1 was retained at $p \leq 0.05$ level. Post test mean score for experimental and control group was 0.8 ± 2 and 7.4 ± 2.1 respectively. The calculated 't'value 16.5 which was greater than the table value. Hence the hypothesis H2 was retained at $p \leq 0.05$ level. Thus it becomes evident that Intradialytic stretching exercise was effective in reducing the severity of muscle cramps among patients undergoing haemodialysis. The chi square value shows that there was no association found between muscle cramps and their selected demographic variables. Hence the hypothesis H3 was rejected. The study concluded that Intradialytic stretching exercise was effective in reducing the severity of muscle cramps among patients undergoing haemodialysis

INTRODUCTION

Bones can break, muscles can atrophy, glands can loaf and even the brain can go to sleep without immediate danger to survival. But should the kidneys fail…Neither bone, muscle, gland, nor brain could carry on". Kidneys are bean shaped organs located on both sides of the spine behind the stomach. Each one of the kidney size is about the adult fist. Their main purpose is to keep the composition of blood in the body balanced to maintain good health. The functions of the kidney are filtering extra toxins from the blood. The kidneys filter about 120 to 152 quarts (113 to 114 liters) of blood to create 1 to 2 quarts (0.94 to 1.81) of urine every day. Renal failure is characterized by progressive destruction of renal mass with irreversible sclerosis and loss of nephrons over period of at least few months to years, depending on the underlying etiology. Renal failure is classified into two. They are acute and chronic renal failure. Acute Renal failure is a rapid decrease in

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Kidney function leading to collection of metabolic wastes in the body. When the Glomerular Filtration Rate decreases Blood Urea Nitrogen level increases waste products build up in the blood causing uremia and azotemia. This acute syndrome may be reversible with prompt intervention. Acute renal failure may lead to chronic renal failure.

Statement of the Problem:

A Study to Assess the Effectiveness of Intradialytic Stretching Exercise on Muscle Cramps among Patients undergoing Haemodialysis at Selected Hospitals, Salem.

OBJECTIVES:

1. To assess the level of muscle cramps among patients undergoing Haemodialysis in experimental and control group.
2. To evaluate the effectiveness of Intradialytic stretching exercise on muscle cramps among patients undergoing haemodialysis in experimental and control group.
3. To associate the level of muscle cramps among patients undergoing haemodialysis with their selected demographic variables in experimental and control group.

ASSUMPTIONS:

1. The patient undergoing haemodialysis may experience muscle cramps in the lower extremities.
2. Intradialytic stretching exercise may reduce the Muscle cramps.

HYPOTHESES:

H1: There is a significant difference in pre test and post test scores on muscle cramps among patients undergoing haemodialysis in experimental group at P ≤ 0.05 level.

H2: There is a significant difference in post test scores on muscle cramps among patients undergoing haemodialysis in experimental and control group at P ≤ 0.05 level.

H3: There is a significant association between the pre test score on muscle cramps among patients undergoing haemodialysis in experimental and control group with their selected demographic variables at P ≤ 0.05 level.

DELIMITATIONS:

1. The study was limited only to the patients undergoing haemodialysis who were experiencing muscle cramps at Salem Gopi Hospital and VIMS Hospital.
2. The data collection period was limited to four weeks.

The study was limited to those who are willing to participate in the study.

Conceptual Framework

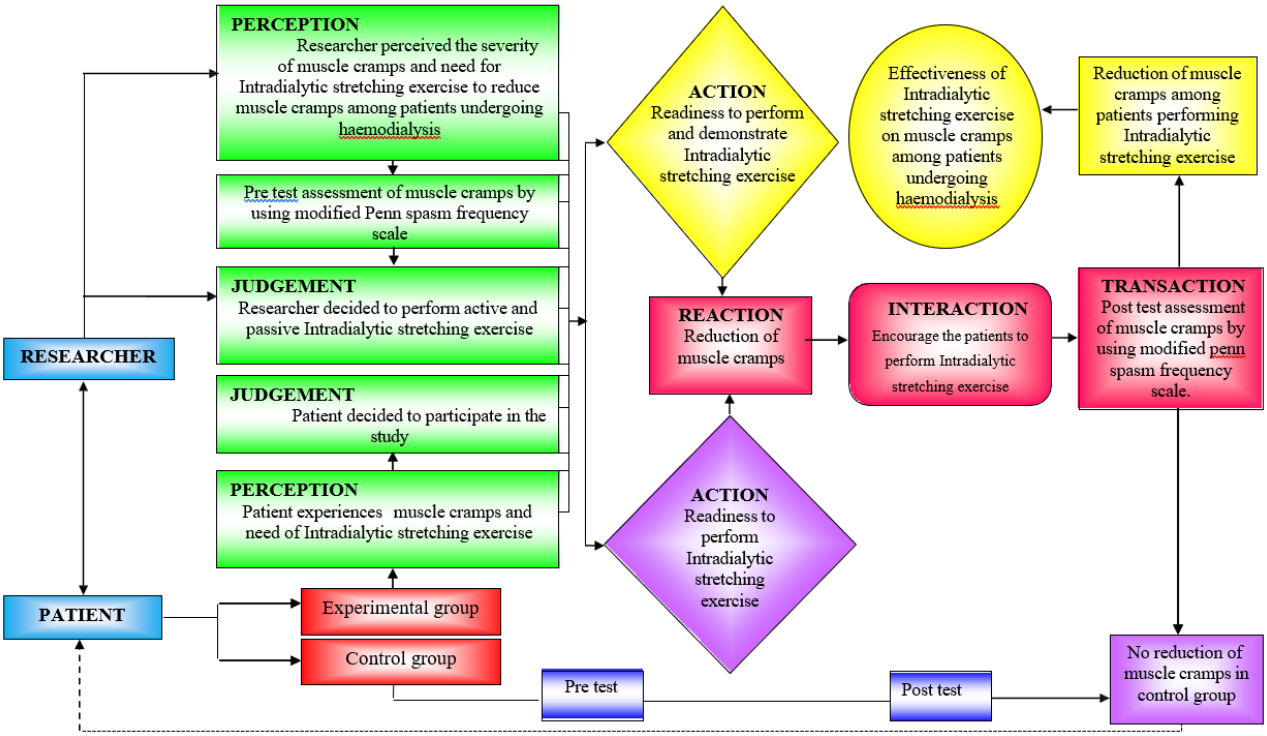
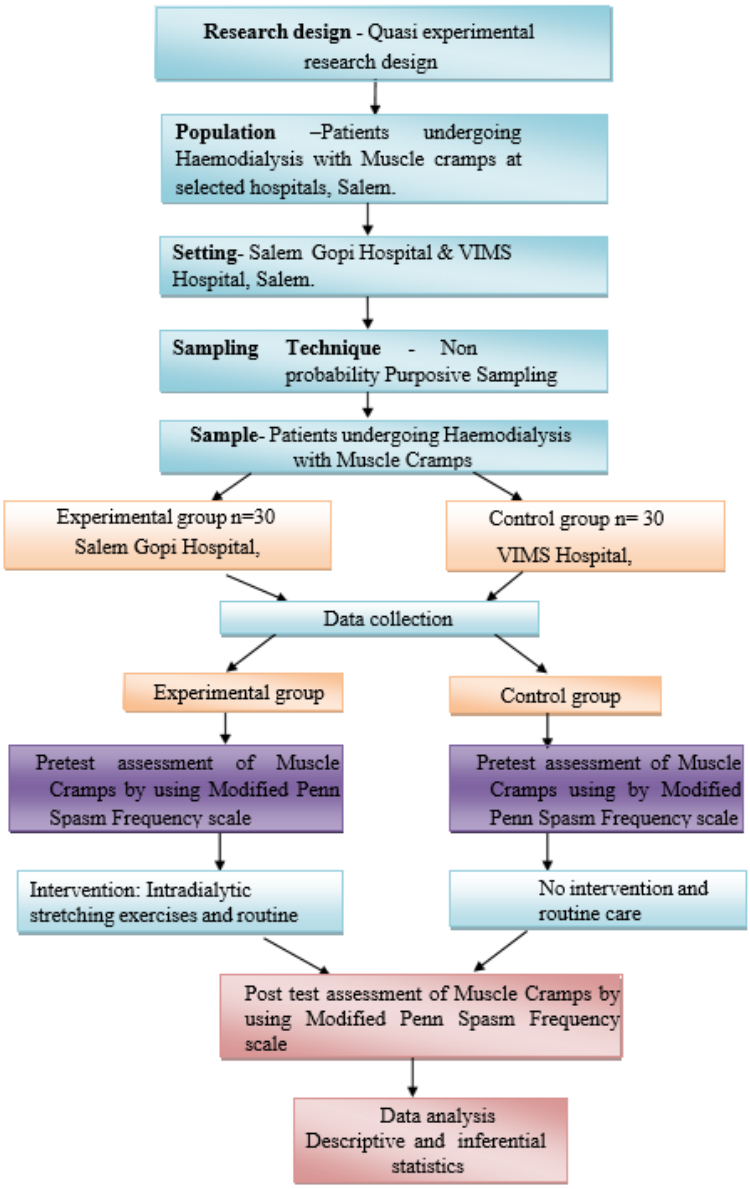


Figure 1: Conceptual Frame Work based on Imogene King's Goal Attainment Theory (1981) of Effectiveness of Intradialytic Stretching Exercise on Muscle Cramps among patients undergoing Haemodialysis. (-------) Not included in the study



CRITERIA FOR SAMPLE SELECTION:

Inclusion criteria

The patients who

- were in the age group of 21 to 70 years.
- were both male and female.
- were diagnosed as chronic renal failure.
- were undergoing haemodialysis twice a week with muscle cramps.
- could understand Tamil or English.

Exclusion Criteria:

The patients who

- were having femoral catheter.
- were undergoing emergency haemodialysis.
- have intellectual or mental impairment.
- were having any lower limb pathology.
- were not willing to participate.

Variables:

Independent variable: Intradialytic stretching exercise

Dependent variable: Muscle cramps

Demographic variables: Age in years, Gender, Educational status, Occupation, Diet, Chronicity of renal failure, Duration of dialysis treatment, Use of Calcium tablet and Co morbid illness.

Description of Tool:

The tool was prepared by the investigator after an extensive study of the related literature and with the guidance of experts. The tool consists of,

Section A: Demographic Data

Structured interview schedule was used to collect demographic data. This section consists of demographic variables such as Age in years, Gender, Educational status, Occupation, Diet, chronicity of renal failure, Duration of dialysis treatment, Use of Calcium tablet and Co morbid illness.

Section B: Modified Penn spasm frequency Scale

Modified Penn spasm frequency Scale was used to assess muscle cramps and scoring was done according to the level of muscle cramps.

Table 1: Scoring procedure for the level of muscle cramps

S.No	Level of Muscle cramps	Score
1	Nil	0
2	Mild cramps	1-4
3	Moderate cramps	5-8
4	Severe cramps	9-12

RESULT AND DISCUSSION

Comparison of mean, standard deviation, mean percentage and mean difference on pre test and post test scores on muscle cramps among patients undergoing haemodialysis in experimental and control group.

Effectiveness of Intradialytic stretching exercise on pre test and post test scores on muscle cramps among patients undergoing haemodialysis in experimental group.

Table 2: Mean, standard deviation and 't' value on pre test and post test scores on muscle cramps among patients undergoing haemodialysis in experimental group. (n=30)

Experimental Group	Mean	S.D	df	' t' value	Table value
Pre test	6.5	2.2			
Post test	0.8	2	29	13.25*	2.045

***significant at p ≤ 0.05 level**

The above table reveals that in experimental group the pretest mean score is 6.5 ±2.2 and the post test mean score is 0.8 ± 2. The calculated "t" value is 13.25 which is greater than the table value. Hence the research hypothesis H1 is retained at p ≤ 0.05 level. Thus it is significantly evident that Intradialytic stretching exercise is effective in reducing muscle cramps among patients undergoing haemodialysis.

Effectiveness of Intradialytic stretching exercise on post test scores on muscle cramps among patients undergoing haemodialysis in experimental and control group.

Table 3: Mean, standard deviation and 't' value on post test scores on muscle cramps among patients undergoing haemodialysis in experimental and control group. (n=60)

Group	Mean	S.D	df	' t' value	Table value
Experimental group	0.8	2	58	16.5*	2.01
Control group	7.4	2.1			

***significant at p ≤ 0.05 level**

The above table reveals in experimental group post test mean score is 0.8 ± 2 and in control group post test mean score is 7.4 ± 2.1. The calculated "t" value is 16.5 which is greater than the table value. Hence the research hypothesis H2 is retained at p ≤ 0.05 level. Thus it is significantly evident that Intradialytic stretching exercise is effective in reducing muscle cramps among patients undergoing haemodialysis.

Association of pre test score on muscle cramps among patients undergoing Haemodialysis with their selected demographic variables in experimental and control group.

Table 4: Chi square test on pre test score on Muscle cramps among patients undergoing Haemodialysis with their selected demographic variables in experimental and control group. (n = 60)

S. No	Demographic variables	Experimental group n =30			Control group n =30		
		df	$\chi 2$	Table value	df	$\chi 2$	Table value
1	Age in years	6	5.3	12.59	6	6.03	12.59
2	Sex	2	3.21	5.99	2	1.71	5.99
3	Educational Status	8	5.4	15.51	8	12.6	15.51
4	Occupation	8	13.4	15.51	8	6.02	15.51
5	Diet	2	1.08	5.99	2	0.07	5.99

6	Chronicity of Renal Failure	2	1.23	5.99	2	1.23	5.99
7	Duration of Haemodialysis	4	2.51	9.49	6	3.87	12.59
8	Use of Calcium Tablets	2	0.42	5.99	2	1.27	5.99
9	Presence of co morbid illness	2	0.36	5.99	2	0.3	5.99

***Significant at p ≤ 0.05 level**

The table 4.7 reveals in both in experimental and control group there is no significant association found between the muscle cramps and selected demographic variables such as age in years, sex, education, occupation, diet, chronicity of renal failure, duration of Haemodialysis, use of calcium tablets and presence of co morbid illness. Hence research hypothesis H3 is rejected for these demographic variables at p≤ 0.05 level.

Summary and Conclusion:

The present study was done to evaluate the effectiveness of Intradialytic stretching exercise on muscle cramps among patients undergoing haemodialysis at selected hospitals. The findings of the study revealed that Intradialytic stretching exercise was effective on significant reduction of muscle cramps among patients undergoing haemodialysis. There was no significant association between the muscle cramps and their selected demographic variables in experimental and control group.

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