

A STUDY TO EVALUATE THE EFFECTIVENESS OF LEG EXERCISE ON FREQUENCY OF MUSCLE CRAMPS AMONG PATIENTS UNDERGOING HEMODIALYSIS AT DAU KALYAN SINGH POST GRADUATE INSTITUTE AND RESEARCH CENTER (DKS), RAIPUR(C.G.)

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ABSTRACT

Muscles Cramps are a common and distressing complication experienced by Patients undergoing Hemodialysis, significantly impacting their quality of life. These involuntary muscle contractions can occur during or after dialysis sessions, causing discomfort and limiting patient's ability to perform daily activities. Despite advances in dialysis technology and management strategies, muscle Cramps remain a persistent challenge in the care of Hemodialysis patients. The results of the pilot study revealed the feasibility and practicability of the study. The reliability of the tool was identified by test retest method karl pearson correlation formula for muscle cramps frequency. The 'r' value is 0.95 , hence the tool was reliable. The 't' test value is 6.28 at $p < 0.05$ which depicts that the intervention is effective in Experimental group. No significant changes observes in Control group.

Keywords: Leg Exercise, Muscle Cramps, Hemodialysis

INTRODUCTION

Chronic renal disease is a significant health issue in India. It is regarded as the third most significant life-threatening ailment. The global prevalence of chronic kidney disease is 34% in individuals with diabetes mellitus, 29% in individuals with hypertension, 14% in individuals with Glomerulonephritis, 1% in individuals with drug-induced nephropathy, and the reason is unknown in 7% of cases. Chronic kidney disease (CKD) is characterized by a sustained reduction in renal function or damage to the kidneys that persists for a minimum of three months. It is categorized into five stages based on the reduced amount of renal function. Individuals suffering from chronic renal disease exhibit several symptoms including hiccups, swelling in the ankles, muscular cramps, muscle spasms, chest pain, difficulty breathing, itching, and high blood pressure.

BACKGROUND OF THE STUDY

These involuntary muscle contractions can occur during or after dialysis sessions, causing discomfort and limiting patient's ability to perform daily activities. Despite advances in dialysis technology and management strategies, muscle Cramps remain a persistent challenge in the care of Hemodialysis patients.

According to Global Dialysis Perspective; India –PMC-NCBT there is 78 Million People affected by the chronic kidney disease. The Million death study estimated the number of kidney failure death to be 136,000 in 2015. 2018 estimate put the number of patients on chronic dialysis in India at about 175,000, giving a prevalence of 129 per Million population new patient develop kidney failure each year 210,000. (Report taken from 19 August 2020 Global dialysis perspective) Around 10% of the Indian population suffers from chronic kidney disease every year.

RESEARCH METHODOLOGY – Experimental research study

RESEARCH APPROACH

Evaluative research approach

RESEARCH DESIGN

Quasi experimental pretest post test control group design

RESEARCH VARIABLES

INDEPENDENT VARIABLE - Leg exercise

DEPENDENT VARIABLE- Frequency of muscle cramps

CONTROL VARIABLES –Standard care, Base line demographic, and Clinical characteristics

POPULATION

TARGET POPULATION – In the present study target population in all patients undergoing hemodialysis at Raipur.

ACCESSIBLE POPULATION – In the present study accessible population are patients undergoing hemodialysis at Dau Kalyan Singh Post Graduate Institute and Research Center (DKS)Raipur (C.G.)and available during the time of data collection.

SAMPLING TECHNIQUE- Non Probability Purposive Sampling Technique

INCLUSION CRITERIA/ EXCLUSION CRITERIA

INCLUSION CRITERIA –

1. Those who are willing to participate for the study.
2. Those who are Undergoing Hemodialysis and available during the Data Collection Period.

EXCLUSION CRITERIA –

1. Patients who are undergoing emergency / first time hemodialysis.
2. Patient with any Peripheral Vascular Disease.
3. Patient who are bedridden /suffering from chronic ailment.

DATA COLLECTION METHOD – by using data collection tool -

DESCRIPTION OF THE TOOL

- There are socio-demographic questionnaire and modified Penn spasm scale after reviewing of the literature. It consists of 2 sections. A& B

SECTION A – Demographic variables:

- It consists of 16 socio-demographic questions, which include age, gender, Residence, Educational status, marital status, duration and frequency of hemodialysis etc.

SECTION B- Modified Penn Spasm scale

- The Penn Spasm Frequency Scale (PSFS) is a measure of self-assessed muscle spasm frequency and severity commonly applied in studies assessing spasticity in the study population.
- The ‘t’ test includes elements of frequency, Duration and level of Pain.

DATA ANALYSIS

1. Descriptive statistics were used to analyze the mean, standard deviation.
2. Karl Pearson's correlation coefficient formula was used to find the 'r' value of muscle cramps frequency.
3. Paired 't' test to assess the effectiveness of leg exercise.

SAMPLE SIZE ESTIMATION –Sample size is taken by previous research population done by Dr Rohan Kumar, PT, PhD, affiliation department of physical therapy, university of Mumbai, India Among 60 hemodialysis patients and further consultation with stratician and guide it was estimated and found to be suitable 60 samples since the main study sample was 60 so rounding of taken 10 samples for pilot study.

PILOT STUDY -10 sample

SETTING – Pandurang Ramarao Dongaowkar District Hospital Durg (C.G.)

DATA ANALYSIS AND INTERPRITATION OF PILOT STUDY

FINDINGS

Table No: 1 Comparison of Leg Cramp comparison score in Experimental Group (n=5)

Pretest Score (mean ± SD)	Post-test score (mean ± SD)	P-value	T-value	Df	P value	T value	Table value	inference
6.8±1.3	4.2±2.22	0.0033*	6.28*	4	0.003	6.28	2.132	Highly significant

Comparison of pre-test and post-test values of scores from Modified pain spam scale was done. the paired 't' test value of df (4) at 0.05 is 2.132and the calculated value is 6.286772864 There was significant improvement in the pain as the difference in score hence the intervention is significantly effective .

Table No: 2 Comparison of Leg Cramp comparison score in control Group (n=5)

Pretest Score (mean ± SD)	Post-test score (mean ± SD)	P-value	T-value	df	P value	t value	Table value	Inference
6 ±1.414	6 ±1.414	0.1419*	1.826	4	0.1419	1.826	2.132	No significant

The comparison of pre-test and post-test values of scores from Modified pain spam scale was done. The paired‘t’ test value of df (4) at 0.05 is 2.132 and the calculated value is 1.826. There was no significant improvement in the pain as the difference in score and there are no significant changes in control group.

CONCLUSION

- ▶ The results of the pilot study revealed the feasibility and practicability of the study.
- ▶ The reliability of the tool was identified by test retest method using Karl Pearson correlation formula for pre test value of both experimental and control group.
- ▶ The r value is 0.95, hence the tool was reliable.
- ▶ The paired‘t’ test value of df (4) at 0.05 is 2.132and the calculated value is 6.286772864 There was significant improvement in the pain as the difference in score hence the intervention is significantly effective.
- ▶ No significant changes observe in Control group.



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