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Effectiveness of leg stretch exercises on fatigue among patients undergoing haemodialysis

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Abstract

Background: Fatigue is a debilitating symptom or side effect experienced by many patients on long term dialysis. According to Indian Council of Medical Research, it is estimated that, among 1 billion populations around 7.85 million people are suffering from renal failure. 45-50% of CKD patients in Andhra Pradesh are below 40 yrs of age. Besides 70% of patients undergoing dialysis under Arogyasri scheme was below 40.

Aim: to assess the effectiveness of Leg stretch exercises on fatigue among patients undergoing haemodialysis.

Setting and Design: Narayana Medical College Hospital, Nellore by using quasi experimental non equivalent control group design.

Materials and Methods: A total of 60 samples were selected by using non probability convenience sampling technique.

Statistical Analysis Used: The collected data was organized, tabulated, analyzed and interpreted by using descriptive and inferential statistics based on the objectives of the study.

Results: The findings of the study revealed that effectiveness of leg stretch exercises on fatigue among patients undergoing haemodialysis, in experimental group, during pretest, 5(17%) had mild fatigue whereas in post test, 16(53%) had mild fatigue. In pretest, 17(57%) had moderate fatigue whereas in post test, 12(40%) had moderate fatigue. In pretest, 8(26%) had severe fatigue whereas in post test, 2(7%) had severe fatigue. In experimental group the post test mean is 27.5 with standard deviation of 9.74 where as in control group the mean is 35.4 with standard deviation of 15.3. The calculated value is 2.20 is greater than the tabulated value 1.69.

Conclusion: The study concludes that the Leg stretching exercises are effective in reducing the fatigue levels.

Keywords: Leg stretch exercises, Fatigue, Haemodialysis

Introduction

Fatigue is an overwhelming sense of exhaustion and decreased capacity for physical and mental work [1]. Fatigue is a debilitating symptom or side effect experienced by many patients on long term dialysis. Fatigue is verbalization of unremitting and overwhelming lack of energy to do routines, increase in physical complaints, emotionally liable or irritable, decreased ability to concentrate, decreased performance/ lethargy /listlessness, decreased libido, psychological demands, state of discomfort and withdrawal of medication [2].

Exercises also increase the blood flow to muscle and greater amount of open capillary surface area in working muscles which result in a greater flux of urea and associated toxins from the tissue to the vascular compartment helps in subsequent removal of the dialyser. There are different exercises like flexibility exercises and strengthening exercises to improve the physical functioning of the patient. Leg stretch exercises done during the dialysis procedure like quadriceps knee strengthening exercise, hamstring exercise and gluteal strengthening exercise will improve the muscle protein synthesis and breakdown, which helps in determining both strength and overall function of the body [3].

World Health Organization estimated that around 1 million new cases of end stage renal disease are detected worldwide every year. Since kidney transplants are much costlier; dialysis becomes the mode of treatment for many [4]. Currently, there are over 1.4 million people on lifesaving dialysis and the number is growing by 8% every year [5].

Statement of the Problem

A study to assess the effectiveness of Leg stretch exercises on fatigue among patients undergoing haemodialysis at Narayana Medical College Hospital, Nellore.

Objectives of the Study

1. To assess the level of fatigue among patients undergoing haemodialysis
2. To assess the effectiveness of leg stretch exercises on fatigue among patients undergoing haemodialysis.
3. To find the association between the effectiveness of leg stretch exercises on fatigue among patients undergoing haemodialysis with their selected socio demographic variables.

Hypotheses

Null Hypotheses

H₀₁:-There is no statistically significant difference on level of fatigue before and after implementation of leg stretch exercises among patients undergoing haemodialysis in experimental group and control group.

H₀₂: There is no statistically significant association between the effectiveness of leg stretch exercises on fatigue and socio-demographic variables of patients undergoing haemodialysis.

Research Hypotheses

H₁: There is a statistically significant difference on level of fatigue before and after implementation of leg stretch exercises among patients undergoing haemodialysis in experimental group and control group.

H₂: There is a statistically significant association between the effectiveness of leg stretch exercises on fatigue and socio-demographic variables of patients undergoing haemodialysis.

Materials and Methods

The study was conducted in Narayana Medical College Hospital, Nellore by using Quasi experimental nonequivalent control group design. A total of 60 patients on haemodialysis were selected by using convenience sampling technique. The data collection includes socio demographic data of patient and fatigue rating scale for assessing the fatigue levels. Pre test was done by using observational checklist and it took 15 min for each patient. Following pre test, intervention with leg stretching exercises for 30 minutes was given to experimental group for 7 days. Post test was conducted on 8th day in both experimental and control group with the same fatigue rating scale to assess the effectiveness of leg stretch exercises.

Plan for Data Analysis: Data analysis was done using descriptive statistics and inferential statistics.

Descriptive statistics

- ♣ Frequency and percentage distribution,
- ♣ Mean & standard deviation

Inferential statistics

- ♣ Chi-square test.

Results and Discussion

Frequency and percentage distribution of fatigue rating scale on fatigue among patients undergoing haemodialysis in experimental group.

Sl. No	Fatigue Rating Scale	Pretest		Post test	
		F	%	F	%
1.	Mild Fatigue	5	17	16	53
2.	Moderate Fatigue	17	57	12	40
3.	Severe Fatigue	8	26	2	7
Total		30	100	30	100

Table 1 Shows that in experimental group during pretest, 5(17%) had mild fatigue whereas in post test 16(53%) had mild fatigue. In pretest, 17(57%) had moderate fatigue whereas in post test, 12(40%) had moderate fatigue. In pretest 8(26%) had severe fatigue whereas in post test 2(7%) had severe fatigue.

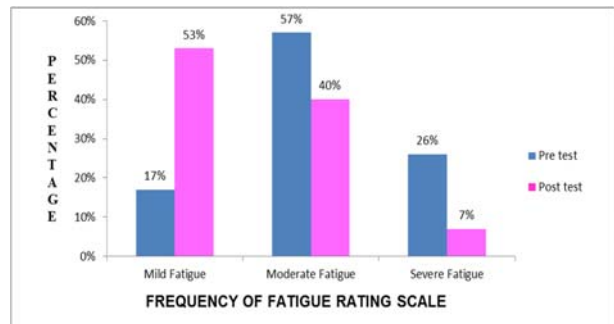


Fig 1: Percentage distribution of fatigue rating scale on fatigue among patients undergoing haemodialysis in experimental group.

Table 2: Compare the effectiveness of Leg stretching exercises on fatigue with the post test scores among patients undergoing haemodialysis

Criteria	Mean	Standard deviation(SD)	Independent T-test
Experimental group.	27.5	9.74	C=2.20 t=1.69 S**
Control group	35.4	15.3	

S* = significant $P < 0.05$ $df_{(n-1)} = 29$

Table 2 shows in experimental group the post test mean is 27.5 with standard deviation of 9.74 where as in control group the mean is 35.4 with standard deviation of 15.3. The calculated value is 2.20 is greater than the tabulated value 1.69 at $P < 0.05$ and the leg stretch exercises are effective in reducing the fatigue levels of patients undergoing haemodialysis.

Association between the effectiveness of leg stretch exercises on fatigue among patients undergoing haemodialysis with socio demographic variables

There is statistically significant association between co-morbid diseases and frequency of dialysis procedure with leg stretch exercises. There is no statistically significant association between leg stretching exercises with age, sex, education, occupation, income, marital status, family type, habit of smoking, habit of alcohol, diet, duration of chronic renal disease, duration of dialysis treatment, history of AV fistula.

Conclusion

The findings of the study shows that Leg stretch exercises are effective in reducing the fatigue levels among patients undergoing haemodialysis.

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