



EFFECTIVENESS OF FOOT REFLEXOLOGY ON MUSCLE CRAMPS AMONG PATIENTS UNDERGOING HEMODIALYSIS

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KEYWORDS :

Dialysis artificially removes waste products and extra fluid from blood.

Dialysis is two type they are hemodialysis and peritoneal dialysis. In hemodialysis, a machine filters blood to remove harmful waste. In peritoneal dialysis, a catheter thin tube inserted into abdomen fills abdominal cavity with a dialysis solution that absorbs waste and excess fluids.

Side effects of hemodialysis are low blood pressure, sepsis, muscle cramps, pruritis, insomnia bone and joint pain, loss of libido, and erectile dysfunction, dry mouth, and anxiety. Muscle cramp is most commonly seen in dialysis patients.

Muscle cramp is a strong, painful contraction or tightening of a muscle that comes on suddenly and last for a few seconds to several minutes. The exact cause of muscle cramps is unknown, some researchers believe inadequate stretching and muscle fatigue leads to abnormalities in the mechanisms that control muscle contraction. For the reduction of muscle cramp foot reflexology is very useful.

Need for the study

WHO study also estimated that, in 2015, total of 1.2 million people died from kidney failure, an increase of 32% since 2005. In 2010, an estimated 2.3 to 7.1 million people with end stage kidney disease died without access to chronic dialysis. Additionally, each year, around 1.7 million people are thought to die from acute kidney injury. Overall, therefore, an estimated 5 to 10 million people die annually from kidney disease.

A new crisis is brewing in the health sector in the state, as kidney disease is found to have gripped more patients. There are about 2.5 lakh kidney patients in Kerala. As per the statistics of the government agency mrithasanjeevani 1450 patients are waiting for kidney transplantation. Others manage to live through regular dialysis. About 50 lakh people are affected with diabetes and hypertension, which ultimately leads to kidney disease.

Muscle cramps are a common complication of hemodialysis treatments. Although the exact cause is unknown, multiple causes have been proposed, including volume contraction, low blood sodium concentration, low body magnesium, and carnitine deficiency.

Statement of the problem

A study to assess the Effectiveness of Foot Reflexology on Muscle Cramps among patients undergoing Hemodialysis at NIMS hospital, Neyyattinkara.

Objectives of the study

1. To assess the level of muscle cramps among patients undergoing hemodialysis.
2. To determine the effectiveness of foot reflexology on muscle cramps among patients undergoing hemodialysis.
3. To find out the association between pretest scores of level of muscle cramps among patients undergoing hemodialysis with their selected demographic variables.

Operational definitions

Assess: It refers to determine the level of muscle cramps perceived by patients after foot reflexology.

Effectiveness: It refers to a relaxation technique, in which the pressure on the foot reduces the muscle cramps among patients undergoing

hemodialysis.

Foot reflexology: It refers to a complementary therapy to reduce the cramps by applying pressure to the heel with thumb finger technique without the use of oil or lotion.

Muscle cramp: Muscle cramps are painful tightening and stiffness of muscle mostly occurs in leg.

Patients undergoing hemodialysis: It refers to the patients who are undergoing hemodialysis (purification of blood through a machine).

Hypotheses

H₁- There will be a significant reduction of the level of muscle cramps following foot reflexology among patients undergoing hemodialysis.

H₂: There will be a significant association between the pretest scores on the level of muscle cramps among patients undergoing hemodialysis with their selected demographic variables.

METHODOLOGY

Research approach

Quantitative and evaluative approach

Research design

Quasi experimental- pretest posttest with control group design.

Experimental group

E 01 X02

C 01 02

E – Experimental group

01 – Pretest

X – Foot reflexology (intervention)

02- Posttest.

C- Control group

VARIABLES

Dependent Variable

Muscle cramp

Independent Variable

Foot reflexology.

Population

The population for the present study were patients undergoing hemodialysis.

Sample and sampling technique

Purposive sampling technique and sample size consists of 60 subject,30 from experimental group and 30 from control group. Sample was selected based on the inclusion and exclusion criteria.

Tool/Instruments

The data collection i used in the present study were:

Section-A: Structured questionnaire consist of Socio demographic data.

Section-B: Modified Ashworth scale

Score Description

0- no increase in muscle tone

1- slight increase in muscle tone, manifested by a catch and release or by minimal resistance at the end of the range of motion when the affected part(s) is moved in flexion or extension

2- slight increase in muscle tone, manifested by a catch, followed by

- minimal resistance throughout the remainder (less than half) of the ROM
- 3- more marked increase in muscle tone through most of the ROM, but part(s) moved easily.
- 4- considerable increase in muscle tone, passive movement difficult
- 5- affected part(s) rigid in flexion or extension

Data collection procedure

The study was conducted after getting the permission from the ethical committee of NIMS hospital. The main study was conducted among 60 patients undergoing hemodialysis selected by purposive sampling. Data collection period was from 4/2/2019 to 9/3/2019. Prior to data collection, the investigator introduces self and explain regarding the study and assures the confidentiality of the information provided by the study participants. Informed consent was obtained from 60 patients who were undergoing hemodialysis, 30 in experimental group and 30 in control group. In an experimental group the investigator will identify reflexology areas in the scale of each foot. Then apply gentle pressure on the areas with thumb finger for 15 minutes each foot. The total procedure takes about 30 minutes. After dialysis procedure post test will be conducted by Modified Ashworth Scale.

1.comparison of pre test score of muscle cramps based on group (n=60) Significant at the level of 0.05

Pre test score of muscle cramps	experimental Count Percentage		Control Count percentage		Z#	P
Slight increase in muscle tone	3	10.0	2	6.7	1.8	0.0072
Slight increase in muscle tone(less than half)	5	16.7	11	36.7		
More marked increased in muscle tone	12	40.0	14	46.7		
Considerable increased in muscle tone	7	23.3	2	6.7		
Affected part(s) rigid in flexion or extension	3	10.0	1	3.3		
Mean+ SD	3.1+ 1.1		2.6+0.9			
Median	3.0		3.0			

2. Comparison of post test score of muscle cramp based on group n=60

Post test score of muscle cramps	Experimental Count percentage		Control Count percentage		Z#	P
No increase in muscle tone	10	33.3	0	0.0	6.08	P<0.01
Slight increase in muscle tone	14	46.7	1	3.3		
Slight increase in muscle tone (less than half)	4	13.3	6	20.2		
More marked increased in muscle tone	2	6.7	10	33.3		
Considerable increased in muscle tone	0	0.0	11	36.7		
Affected part(s) rigid in flexion or extension	0	0.0	2	6.7		
Mean+ SD	0.9+0.9		3.2+1			
Median	1.0		3.3			

3. Association between pretest scores on level of muscle cramp among patients undergoing hemodialysis with their selected demographic variable.

Sl. no	Variable	No/Slight increase in muscle tone		Marked/considerable increase in muscle tone		x ²	p
		Count	Percentage	Count	Percentage		
1	Age (yrs)					0.06	0.807
	<=50	9	33.3	18	66.7		
	>50	12	36.4	21	63.6		
2.	Sex					0.05	0.825
	Male	13	36.1	23	63.9		
	Female	8	33.3	16	66.7		
3.	Marital Status					2.95	0.086
	Married	13	28.9	32	71.1		

	others	8	53.3	7	46.7		
4.	Educational Qualification						
	Up to high school	15	39.5	23	60.5	0.91	0.340
	Graduate and above	6	27.3	16	72.7		
5.	Occupation						
	unemployed	11	45.8	13	54.2	2.7	0.259
	coolie	2	18.2	9	81.8		
	Govt/pvt employee	8	32.0	17	68.0		
6.	Family Income (Rs)						
	<5000	8	44.4	10	55.6	1.01	0.602
	5001-10000	7	30.4	16	69.6		
	>10000	6	31.6	13	68.4		
7.	Religion						
	Hindu	13	39.4	20	60.6	0.7	0.703
	Christian	5	27.8	13	72.2		
	Muslim	3	33.3	6	66.7		
8.	Type of family					1.52	0.218
	Nuclear family	8	47.1	9	52.9		
	Joint family	13	30.2	30	69.8		
9.	Domicile						
	Urban	2	20.0	8	80.0	1.19	0.276
	rural	19	38.0	31	62.0		
10.	Presence of co morbid conditions						
	Diabetes mellitus	0	0.0	2	100.0	3.38	0.185
	Hypertension	11	47.8	12	52.2		
	Both A and B	10	28.6	25	71.4		

The present study reveals that majority of the clients on hemodialysis experience muscle cramp and Foot Reflexology had shown to decrease muscle cramp. The study also reveals that there is significant reduction in muscle cramp after implementing Foot Reflexology. The Mann-whitney test is used to analyze the data and the result showed that the score significantly differ between the group 0.05at post intervention level. Thus it conclude that the foot reflexology is statistically significant in reducing muscle cramp among patients undergoing hemodialysis and so the research hypothesis was accepted.

Nursing Implications

The present study has got implications in the field of nursing service, nursing administration, nursing education and nursing research.

Nursing service

On the basis of the findings of the study a training programme may be conducted for staff nurses working in dialysis unit to improve their skills for assessment and early detection of problems of patients during dialysis.

Nursing Education

On the basis of the findings of the study an orientation programme may be conducted for the newly appointed staff nurses to improve their skills for assessment, early detection of problems of the patients during hemodialysis and application of non-therapeutic interventions. Research findings can be utilizes as a resource material for teaching nursing students to improve the holistic approach in nursing research. Nursing student can use the study findings to recognize the complications occurring during dialysis and the role of Foot Reflexology in reducing the incidence the muscle cramp. Nursing students can utilize the findings for updating their pertinent knowledge regarding beneficial effects of foot reflexology in reducing the muscle cramp.

Nursing administration

The nursing administrator should take part in the health policy making, and developing protocols, standing orders related to chronic kidney disease education and new methods to reduce muscle cramp among patients undergoing hemodialysis. Administrators can post renal nurse specialist in the dialysis unit to enhance the quality of nursing care to the patients undergoing hemodialysis. The nursing administrators should concentrate on the proper selection,placement and effective utilization of the nurses in all areas, giving opportunities for creativities, creating interest and enhance ability in reducing the muscle cramp among patients undergoing hemodialysis.

Nursing research

A similar study can be done with a large sample. A study can be done for analyzing each problems of patients with hemodialysis in a wider perspective. The study will be a motivation for the beginning researcher to conduct similar studies. The research paper based on the study findings can be published in nursing journals, used for scientific paper presentations, poster presentations and conferences.

Limitations

The limitations of the present study are

1. Included only 60 patients with hemodialysis.
2. Lab values are not included in the study.
3. Only one problem (muscle cramp) faced by patients are included.

Recommendations

Recommendations

The following recommendations are offered by the researcher for the future study for the basis of present study.

1. In-service education program regarding the management of patients with muscle cramp can be organized.
2. Mass awareness programme can be organized on the beneficial effects of foot reflexology.
3. Care guide can be prepared regarding importance of foot reflexology.
4. Renal nurses are ideally positioned to engage in early identification and
5. Regular monitoring of muscle cramp in people undergoing hemodialysis.

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