



RESEARCH ARTICLE

“A STUDY TO ASSESS THE EFFECTIVENESS OF INTRADIALYTIC EXERCISE ON MUSCLE STRENGTHENING OF HEMODIALYTIC PATIENTS IN SELECTED HOSPITALS OF GANDHINAGAR”

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Abstract

A Quasi-experimental study was conducted to assess the effectiveness of intradialytic exercise on haemodialytic patients in selected areas of Gandhinagar. The study was conducted among the haemodialytic patients group in selected areas of Gandhinagar. The main aim of our study is to evaluate the effectiveness of intradialytic exercise on haemodialytic patients in selected areas of Gandhinagar. The 'general system model' was used as conceptual framework. A quantitative approach with Quasi experimental study design was used to achieve the objective of the study. The study samples considered of 50 haemodialytic patients in selected hospitals of Gandhinagar. The observational checklist was used to assist the effectiveness of intradialytic on haemodialytic patients in selected areas of Gandhi. The result shows that intradialytic exercise given to the haemodialytic patients in experimental group, the muscle strengthening improved which was assessed by observational checklist. In the experimental group, the pretest mean is 8.08 and posttest is 10.6, the mean difference was 2.52, standard deviation of pre-test was 1.87 and of posttest was 3.05 which showing that level of muscle strengthening was improved. In control group, the pre-test mean is 7.4 and the post-test is 7.12, the mean difference is 0.28, standard deviation of pre-test is 1.83 and of post-test is 1.94. Calculated value is 3.83 which is more than table value at level of 0.05 level of significance which showing effectiveness of intradialytic exercise. This study therefore, offers an encouraging solution towards improvement of muscle weakness and level of muscle strengthening score after administration of intradialytic exercise. The study intends to assess the effectiveness of intradialytic exercise on haemodialytic patients in selected areas of Gandhinagar. The study reveals that the post-test score of haemodialytic patients on muscle strengthening is higher in the experimental group than the control group. It shows that Intradialytic exercise is more effective in experimental group so Null hypotheses is rejected and research hypotheses is accepted.

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Introduction:-

Chronic kidney disease (CKD) is an umbrella term that describes kidney damage or a decrease in the glomerular filtration rate for three or more months. Chronic kidney disease is associated with decreased quality of life, increased health care expenditures and premature death. If untreated can result in End stage renal disease (ESRD) and necessitate renal replacement therapy ie. dialysis or kidney transplantation. Chronic kidney disease (CKD) is an important public health problem affecting more than 10% of the general population. It is a silent disease and if not detected and treated early, may progress to End stage renal disease (ESRD). When the kidney's fail and life cannot be sustained, any more therapies tailored to replace all or most of the functions of the kidney are essential, which constitute Renal replacement therapy (RRT). Hemodialysis is a lifesaving treatment for ESRD in which substances move from the blood through a semipermeable membrane and into a dialysis solution. It helps to correct fluid and electrolyte imbalances and to remove waste products.² Following a hemodialysis, the patient normally feels weak and fatigued sometimes even too tired to eat. Sudden drops in Blood pressure may cause the patient to become weak, dizzy and nauseated. Fluid and electrolyte levels drops rapidly and cause the patient to feel lethargic and have muscle cramps. Chronic renal failure and its treatment can severely compromise quality of life of people affected by the disease. Caring for the client with CRF involves many challenges. Numerous physical and psychosocial manifestations are associated with renal disease and its treatment. Self-management is integral to ensure a good quality of life. Nurses can support self management through education of clients ,planning for exercise programs and through supportive communication. Depression and fatigue are common in ESRD patients undergoing hemodialysis , which negatively affects their QOL. Exercise can mitigate this effect. Patient's self-efficacy and resilience may be crucial mediators in exercise. Design. This study was a randomized controlled trial. Method. Seventy-six participants were randomly assigned to either a control or exercise group. Both groups received routine care; whereas the exercise group participated the 3- months IARCEP. Data were collected at baseline, the first, second, and third months, over a 14 months in 2013-2014.³

Need Of The Study

Need and Significance of the study Chronic renal failure is a progressive damaging and irreversible disturbance of renal function in which the body's ability in preserving metabolism and water or electrolyte balance would decrease, uremia is more. More than 60,000 people die annually because of kidney failure all over the world. It is estimated that in India about 1,00 000 persons suffering from End stage renal disease each year, of which only about 20,000 get treated. Fatigue which can be conceptualized on a continuum from extreme tiredness to high energy, has been reported to affect 60% to 97% of chronic Hemodialysis patients.⁴ Fatigue is one of the most frequent symptoms of patients with end stage renal disease undergoing maintenance dialysis therapy. The prevalence of fatigue ranges from 60% to as high as 97% in end stage renal disease patients on long term dialysis therapy. Muscle cramps occurring frequently. It can involve the legs, most commonly in the feet, and involve arms, hands and abdominal muscles. It is estimated that 33to 86 percent of patients receiving dialysis have experienced cramps. Intradialytic exercise programs are important to enhance patient physical functioning, exercise capacity and improve overall health. Exercise during the treatment does not interfere with the treatment, and often the patients are more stable hemodynamically. Also exercise during dialysis improves clearances by opening up vascular beds in the working muscles, exposing more tissue to the dialysis procedure. The incidence of ESRD in NIMS Hospital is increasing at an alarm state. The reported cases of Chronic renal failure admitted from 2009-2012 are as follows: In Hemodialysis unit researcher observes that majority of the patients undergoing Hemodialysis experience severe fatigue and muscle cramps and found out the necessity of implementing therapeutic nursing interventions in reducing the severity of complications. As an interventional measure the researcher focused on the importance of practicing intradialytic stretching exercises like toe taps, arm curls, straight leg raise, seated marching in reducing the severity of complications. So, the researcher felt interested in assessing the effect of intradialytic stretching exercises on fatigue and muscle cramps among dialysis patients. are common complication of Hemodialysis treatment

Problem Statement:-

“A STUDY TO ASSESS THE EFFECTIVENESS OF INTRADIALYTIC EXERCISE ON MUSCLE STRENGTHENING OF HEMODIALYTIC PATIENTS IN SELECTED HOSPITALS OF GANDHINAGAR”

Objective:-

1.To assess the effectiveness of intradialytic Exercise on muscle strengthening before & After demonstration of muscle strengthening exercises in Experimental group.

- 2.To assess the effectiveness of intradialytic Exercise on muscle strengthening of hemodialysis patients in control Group.
- 3.To compare the effectiveness of intradialytic Exercise on muscle strengthening between the experimental and control Group.

Hypothesis: -

H0 :- There will be a no significant differences in effectiveness of intradialytic Exercise on muscle strengthening of hemodialysis patients in Experimental group and control Group at 0.05 level of Significant.

H1 :- There will be a significant differences in effectiveness of intradialytic Exercise on muscle strengthening of hemodialysis patients between experimental & control Group at 0.05 level of Significant.

Operational Definition:-

Assess:- In study to assess muscle strengthening In hospital.

Effectiveness:-It refers to expected improvement in muscle strengthening as evidenced by difference between experimental & control Group.

Intradialytic Exercise:- Occurring or carried out during hemodialysis (E.g. biceps curl exercise , straight leg exercise , knee extension etc.)

Patient :- A Person receiving or registered to receive medical treatment.

Hemodialysis :- A procedure where a dialysis machine and a special filter called an artificial kidney, or a dialyzer , are used to clean your blood.

Muscle strength:-It is defined as the ability to exert force on an external resistance

Methodology:-

Research methodology indicates the general pattern of organizing the procedure for gathering valid and reliable data for an investigation. The content of this chapter includes research approach and its rational, description of setting and population, description of sample, tool selection, construction, description and rational of the tool, procedure of data collection, data analysis and statistically methods used.

Table 4.1.1:- Description of demographic variables of samples according to age of patients (N=50).

S.R.N O	DEMOGRAPHIC VARIABLE	CATEGORIES	EXPERIMENTAL GROUP	CONTROL GROUP
1	Age of people	21-30 Years	3(12%)	2(8%)
2		31-40 Years	6(24%)	5(20%)
3		41-50 Years	6(24%)	9(36%)
4		51-60 Years	5(20%)	2(8%)
5		Above 60	5(20%)	6(24%)

Table 4.1.1: Above column graph shows that 12% of samples (3) were in the age group of 21-30 years, 24% of samples (6) were in the age group of 31-40 years, 24% of samples (6) were in the age group of 41-50 years and 20% of samples (5) of the age group of 51- 60 years, were 20% of samples (5) of the age group of above 60 years in experimental group and 8% of samples (2) were in the age group of 21-30 years, 20% of samples (5) were in the age group of 31-40 years, 36% of samples (9) were in the age group of 41-50 years, 8% of samples (2) were in the age group of 51-60 years, were 24% of samples (6) of the age group of above 60 years in control group.

Table 4.1.2:- Description of demographic variables of samples according to gender of patient. (N=50).

S.R. NO	DEMOGRAPHIC VARIABLE	CATEGORIES	EXPERIMENTAL GROUP	CONTROL GROUP
1	Gender of people	Male	13(52%)	12(48%)
2		Female	12(48%)	13(52%)
3		Transgender	0(0%)	0(0%)

Table 4.2.2 : Above column graph shows that 52% of samples (13) in experimental group and 48% of samples (12) in control group were male and 48% of samples (12) in experimental group and 52% of samples (13) in control group were female.

Table 4.1.3:- Description of demographic variables of samples according to educational status of patients. (N=50).

SR. NO	DEMOGRAPHIC VARIABLE	CATEGORIES	EXPERIMENT AL GROUP	CONTROL GROUP
1	Education of people	Primary education	4(16%)	6(24%)
2		Secondary education	8(32%)	6(24%)
3		Higher secondary education	4(16%)	7(28%)
4		Graduate and above	6(24%)	5(20%)
5		Illiterate	3(12%)	1(4%)

Table 4.1.3: Above column graph shows that 12% of samples (3) were illiterate, 16% of samples (4) have primary education, 32% of samples (8) have secondary education, 16% of samples (4) have higher secondary education, 24% of samples (6) have graduate and above education in experimental group and 4% of samples (1) were illiterate, 24% of samples (6) have primary education, 24% of samples (6) have secondary education, 28% of samples (7) have higher secondary education, 20% of samples (5) have graduate and above education in control group.

Table 4.1.4:- Description of demographic variables of samples according to Occupation status of patients. (N=50).

SR.NO	DEMOGRAPHIC VARIABLE	CATEGORIES	EXPERIMENTAL GROUP	CONTROL GROUP
1	Occupation of people	Unemployment	7(28%)	6(24%)
2		Service (Job)	15(60%)	16(64%)
3		Business	3(12%)	3(12%)

Table 4.1.4: Above column graph shows that 28% of samples (7) were Unemployment , 60% of samples (15) doing Service(Job), 12% of samples (3) doing Business occupation in experimental group and 24% of samples (6) were Unemployment, 64% of samples (16) doing Service (Job) , 12% of samples (3) doing Business occupation in control group.

Table 4.1.5:- Description of demographic variables of samples according to family income of patients (N=50).

SR.NO	DEMOGRAPHIC VARIABLE	CATEGORIES	EXPERIMENTAL GROUP	CONTROL GROUP
1	FAMILY INCOME (PERMONTH)	<10,000Rs.	(28%)	(24%)
2		10,001-20,000 Rs.	(20%)	(20%)
3		20,001-30,000 Rs.	(24%)	(20%)
4		30,001-40,000 Rs.	(16%)	(20%)
5		>40,000 Rs.	(12%)	(16%)

Table 4.1.5: Above column graph shows that 28% of samples (7) were earning <10,000Rs, 20% of samples (5) earning 10,001-20,000Rs, 24% of samples (6) earning 20,001- 30,000Rs, 16% of samples (4) earning 30,001-40,000Rs, 12% of samples (3) earning >40,000Rs in experimental group. 24% of samples (6) were

earning <10,000Rs, 20% of samples (5) earning 10,001-20,000Rs, 20% of samples (5) earning 20,001-30,000Rs, 20% of samples (5) earning 30,001-40,000Rs, 16% of samples (4) earning >40,000Rs in control group.

Table 4.1.6:- Description of demographic variables of samples according to knowledge of patients regarding intradialytic exercise (N=50).

SR. NO.	DEMOGRAPHIC VARIABLE	CATEGORIES	EXPERIMENTAL GROUP	CONTROL GROUP
1	Knowledge of Patient regarding intradialytic exercise ?	Yes	0(0%)	0(0%)
		No	15(60%)	15(60%)
		Maybe	10(40%)	10(40%)

Table 4.1.6: In the above-mentioned table, 0% of samples (0) in experimental group and 0% of samples (0) in control group have knowledge regarding intradialytic exercise. 60% of samples (15) in experimental group and 60% of samples (15) in control group have no knowledge regarding box breathing exercise. 40% of samples (10) in experimental group and 40% of samples (10) in control group have just heard the name of intradialytic exercise and have very less knowledge regarding it.

Table 4.1.7:- Description of demographic variables of samples according to history of any family member suffering from any kidney disease (N=50).

SR. NO.	DEMOGRAPHIC VARIABLE	CATEGORIES	EXPERIMENTAL GROUP	CONTROL GROUP
1	IF ANY FAMILY MEMBER SUFFERING FROM ANY KIDNEY DISEASE?	Yes	10(40%)	10(40%)
		No	15(60%)	15(60%)

Table 4.1.7: In the above-mentioned table, 40% of samples (10) experimental group and 40% of samples (10) in control group were having family member suffering from kidney disease. 60% of samples (15) in experimental group and 60% of samples (15) in control group were not having family member suffering from kidney disease..

Table 4.1.8:- Description of demographic variables of samples according to muscle injury . (N=50)

SR. NO.	DEMOGRAPHIC VARIABLE	CATEGORIES	EXPERIMENTAL GROUP	CONTROL GROUP
1	MUSCLE INJURY	Yes	12(48%)	12(48%)
		No	13(52%)	13(52%)

Table 4.1.8: In the above-mentioned table, 48% of samples (12) in experimental group and 52% of samples (13) in control group were having muscle injury. 48% of samples (12) in experimental group and 52% of samples (13) in control group were not having muscle injury.

Summary

The aim of the study on uses of intradialytic exercise and its association with selected variables in terms of muscle weakness among the Haemodialysis patients.

Based on the objective extensive research for literature was need to determine and develop the conceptual framework, research approach and methodology to conduct the study. Conceptual framework based on general system model was used to assess the effectiveness of intradialytic exercise on haemodialysis patients.

Research approach used for the study was quasi experimental. Present study was undertaken at Gandhinagar. Observation checklist was used by reviewing the literature and under the expert guidance of lecture from Apollo institute of nursing, Gandhinagar.

The study comprises of total 50 people was selected at Apollo hospital international limited Gandhinagar.

The investigator collected data by establishing rapport with subjects and confidentiality of their responses are assured. The data was analysed and interpreted in terms of objectives of study. Descriptive statistics are utilised for data analysis.

Conclusion:-

The study intends to assess the effectiveness of experimental intradialytic exercise on muscle strengthening of haemodialysis patients in selected hospitals of Gandhinagar. The study reveals that the Experimental group post test score is Higher than the Post- test score of control group regarding haemodialytic patients of selected hospitals of Gandhinagar.

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