SIGNIFICANT EFFECT OF MASSAGE ON FATIGUE IN HAEMODIALYSIS IN PATIENTS

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ABSTRACT:

An interventional study was conducted to assess the effect of back and lower leg massage on fatigue in chronic kidney disease patients undergoing haemodialysis. Fatigue is an invisible and highly prevalent symptom in all chronic illnesses. Fatigue is a common symptom reported by people with Chronic Kidney Disease (C.K.D.) is a non-specific and invisible symptom and is a phenomenon. The objective of the study was to find out the effect of massage of body on fatigue in CKD patients undergoing haemodialysis and to promote the comfort by applying intervention and minimising the fatigue by increasing the energy level.

Keywords: *Fatigue, CKD, Haemodialysis, Massage, Energy.*

About the Author:

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INTRODUCTION:

Fatigue a common symptom reported by people with Chronic Kidney Disease (C.K.D.) is a non-specific and invisible symptom and is a phenomenon. There is limited understanding of the level of fatigue experienced by people suffering from C.K.D., with research currently limited to people treated with haemodialysis. Fatigue is a highly prevalent symptom experienced by people who live with chronic illness, including those with chronic renal failure who require maintenance haemodialysis. Massage is the term applied to certain manipulations of the soft tissues. These manipulations are most efficiently performed with the palmer aspect of hand and administered for the purpose of producing effects on nervous system, muscular system as well as on the local and general or systemic circulation of the blood and lymph.

Patients who experience symptoms of kidney failure often feel tired, have a decreased appetite, trouble concentrating, swelling in their feet and hands, muscle cramps, itching, and either a decrease or increase in urination Daugirdas, Blake,& Ing (2001).

Intense review of literature was done before conducting the present study. Mukadder Mollaoglu (2009) found that fatigue experienced by people with HD in the study was very high, and their energy level was low. Killingworth etal, There is need to apply some alternate therapy to decrease the level of fatigue and increase the level of energy in the patients, in order to make patients at ease during and after haemodialysis. Therese Maria A., Dr. Balu V.(2008), treatment of fatigue depends on its direct cause, but there are several commonly prescribed treatments for non-specific fatigue, including dietary and lifestyle changes, the use of essential oils and herbal therapies, massage therapies, meditation, relaxation exercises, traditional Chinese medicine and colour-therapy etc. that are useful in relieving fatigue. Haemodialysis is a process of cleansing the blood of accumulated waste products. It is used for patients with end stage renal disease or for acutely ill patients who require short term dialysis. The best way to produce energy is regular aerobic exercise. Thus, it may improve the energy level if the intervention can be provided; the participants' energy can be saved or increased in appropriate ways, for the daily activities in CKD patients. Fatigue and its effects can be minimised by doing regular exercise. McCloskey& Bulechek (1999)

NEED FOR THE STUDY:

Patients with CKD spend most of time in the hospital as an indoor and outdoor patient. This affects their energy and quality of life. Fatigue, a common symptom reported by people with C.K.D. is a non-specific and invisible symptom and is a phenomenon. Everyone can benefit from reflexology (massage). Any one and every one can benefit from reflexology (massage).

It has amazing ability to harmonise all body systems very quickly after its application. There is need to assess the level of fatigue and energy in the patients. In order to make patients at ease during and after haemodialysis, alternative therapies such as acupressure, aquatic therapy, massage therapy,

meditation, deep breathing, biofeedback, yoga have been helpful to relieve fatigue Chintamani (2011).

OBJECTIVES OF THE STUDY:

1. To assess the level of fatigue among patients with CKD undergoing haemodialysis.
2. To assess the effect of massage among patients with CKD undergoing haemodialysis.
3. To find out the association between levels of fatigue among CKD patients undergoing haemodialysis with selected demographic variables.

DATA COLLECTION:

The study was conducted at Dialysis Unit at Govt. Medical College & Guru Nanak Dev Hospital, Amritsar, Punjab. Sample size was 200 it was divided into two groups, control and experimental. Data was collected by purposive sampling technique

TOOL FOR DATA COLLECTION:

Data were collected by using tool comprised of two parts. Part-1 had structured questionnaire of about 50 questions related to demographic variables, chronic kidney disease, haemodialysis, fatigue and massage. Part-II of the tool comprised of two scales, one is VAS-F (Visual Analogue Scale-Fatigue) that is a horizontal line, at one end no fatigue and on the other end maximum fatigue and other is sub scale of energy that is a horizontal line, at one end no energy and on the other end maximum energy.

PRCEDURE FOR DATA COLLECTION:

The data (fatigue) was measured twice, one before the start of haemodialysis and after the completion of haemodialysis but before moving the subject out of the bed after removal of cannula in both group study subjects. The study subjects of experimental group were given intervention as massage in lower back and lower leg massage with olive oil as intervention for 5 minutes on each part. For one subject it took total 15 minutes for intervention. Intervention was given one hour before the completion of haemodialysis in the experimental group and control group was given no intervention but only haemodialysis. Data collection was done after taking permission and obtaining written consent from study subjects before data collection. Data were collected as per inclusion criteria & were analysed by using SPSS 15. under statistical and inferential methods under three sections.

- **SECTION- I: TABLE .1 : DEMOGRAPHIC VARIABLES OF EXPERIMENTAL AND CONTROL GROUP STUDY SUBJECTS.**

N=200

Demographic Variables		Experimental group n=(100), %		Control group N =(100), %		Total subjects N=(200),%	
			Percentage (%)		Percentage (%)		Percentage (%)
Age in years							
1.	≤21 years	01	1.0%	01	1.0%	002	1.0%
2.	21-29 years	08	8.0%	09	9.0%	017	8.5.0%
3.	30-39 years	08	8.0%	06	6.0%	014	7.0%
4.	40-49 years	26	26.0%	25	25.0%	051	25.5%
5.	≥ 50 Years	57	57.0%	59	59.0%	116	58%
Gender							
1.	Male	59	59.0%	68	68.0%	127	63.5%
2.	Female	41	41.0%	32	32.0%	073	36.50%
Marital status							
1.	Married	93	93.0%	95	95.0%	188	94%
2.	Unmarried	07	7.0%	05	5.0%	012	6.0%
Educational status							
1.	Primary	23	23.0%	24	24.0%	47	23.50%
2.	8^{th}.Class	15	15.0%	13	13.0%	28	14.0%
3.	Metric	28	28.0%	31	31.0%	59	29.50%
4.	10+2	16	16.0%	12	12.0%	28	14.0%
5.	Graduate	18	18.0%	20	20.0%	38	19.0%
Occupation							
1.	Govt.	11	11.0%	10	10.0%	21	10.5%
2.	Semi- Govt.	08	8.0%	09	9.0%	17	8.5%
3.	Private	25	25.0%	23	23.0%	48	24.0%
4.	Business	07	7.0%	11	11.0%	18	18.0%
5.	Any other	49	49.0%	47	47.0%	96	48.0%
Monthly income							
1)	< 5000	41	41.0%	43	43.0%	84	42.0%
2)	5001 -10,000	30	30.0%	27	27.0%	57	28.5%
3)	10,001- 20,000	17	17.0%	15	15.0%	32	16.0%
4)	20,001- 30,000	10	10.0%	08	8.0%	18	9.0%
5)	>30,000	02	02 .0%	07	7.0%	09	4.5%

Presence of Anaemia	05	05.0%	03	3.0%	08	04.0%
1. Severe Anaemia	37	37.0%	36	36.0%	73	36.5.0%
2. Mod. Anaemia	51	51.0%	57	57.0%	108	54.0%
3. Mild Anaemia	07	07.0%	04	4.0%	11	5.5.0%
4. No Anaemia						
Frequency of HD						
1. Once a week	05	5.0%	12	12.0%	17	8.5.0%
2. Twice a week	61	61.0%	68	68.0%	129	64.5.0%
3. Thrice a week	34	34.0%	20	20.0%	54	27.0%
Duration of HD						
1. Two Hours	00	00	00	00	00	00
2. Three Hours	38	38.0%	44	44.0%	82	41.0%
3. Four Hours	62	62.0%	56	56.0%	118	59.0%

As per above Table no. 1, total 200 CKD patients participated in the present study. In the above table percentage distribution of the study samples determined as per the demographic variables like age, gender, marital status, education, occupation and monthly income. Percentage distribution of the study samples also determined as per the presence of anaemia, frequency and duration of haemodialysis for experimental group, control group and total participants differently.Total 200 CKD patients participated in the study majority 59% (118) subjects had 4 hours duration of haemodialysis and 41% (82) had 3 hours duration of haemodialysis. No study subject had 2 hours duration of haemodialysis in the present study.

- **SECTION- II Table: 2: Mean Score, SD and percentage of presence of fatigue among patients with CKD undergoing haemodialysis experimental group & control group during Pre test: Total Subjects**

N=200

Pre- interventional	**Experimental group n = 100**				**Control group n = 100**			
Fatigue characteristic	**N**	**%**	**Mean Score**	**SD**	**n**	**%**	**Mean Score**	**SD**
Minimum fatigue	00	00.0%	3.07	0.685	01	01.0%	2.71	0.729
Mild fatigue	20	20.0%			42	42.0%		
Moderate fatigue	53	53.0%			42	42.0%		
Maximum fatigue	27	27.0%			15	15.0%		

- The above Table-no 2 depicts presence of fatigue as moderate fatigue, maximum fatigue, mild fatigue and minimum fatigue in experimental group and control group study subjects. Each group had 100 subjects during pre-test period or pre-haemodialysis period. **In the experimental group** Female study subject had more level of fatigue with mean score 3.10 that was greater than mean score of the experimental group. So the female study subjects suffered with more fatigue in comparison to male study subjects during the pre interventional period. The level of energy or vitality in experimental group study subjects was low as the level of fatigue was more in the study subjects undergoing haemodialysis. In the **control group** the percentage of energy or vitality was low in control group study subjects. First objective of the study is achieved.

- **SECTION- III:**

OBJECTIVE II: TO ASSESS THE EFFECT OF MASSAGE AMONG PATIENTS WITH CKD:

TABLE: 3: MEAN SCORE, S D., p VALUE OF LEVEL OF FATIGUE AMONG PATIENTS WITH CKD UNDERGOING HEMODIALYSIS IN EXPERIMENTAL AND CONTROL GROUP (N=200)

Fatigue characteristics	Experimental group n=100		Control group n=100		Mean difference	p Value
	Mean Value	SD	Mean Value	SD		
Level of Fatigue-Pre HD	3.07	0.685	2.71	0.729	.360	*** .000
Level ofFatigue-Post HD	1.82	0.626	2.08	0.662	-.260	***.000
Difference of fatigue in pre & post HD	1.250	0.520	.630	0.525	.620	**.001

Significant p value=.05 **Highly Significant p value.001 ***Highly Significant p value.000

The table No. 3 reveals the results of fatigue assessed during pre-interventional period in CKD patients undergoing haemodialysis in the experimental group. The result of fatigue was assessed during post interventional period and the level of fatigue was assessed during pre-procedure (HD) in CKD patients undergoing haemodialysis in the control group. Subjects in control group had less level of fatigue than that of subjects in the experimental group during the pre-HD assessment as assessed by the researcher. It showed that HD is also a remedial measure to reduce the level of fatigue but the results concluded that massage is an effective therapy to minimise the fatigue and restore the energy as shown by the statistical results of experimental group subjects. The body massage (massage of back of lower leg and lower back) is more effective to reduce the level of fatigue in subjects undergoing haemodialysis as it is statistically significant.

- **SECTION- IV:**

  OBJECTIVE III: TO FIND OUT ASSOCIATION BETWEEN LEVEL OF FATIGUE AMONG CKD PATIENTS WITH SELECTED DEMOGRAPHIC VARIABLES:

  TABLE: 4: Minimum, mild, moderate, maximum fatigue, Chi square and p values of the selected demographic variables with fatigue in the control and experimental group (N=200)

Demographic Variables	Experimental group n=100						Control group n=100					
	Fatigue						Fatigue					
	Mi %	Ml %	Md %	Mx %	X^2	p value	Mi %	Ml %	Md %	Mx %	X^2	P value
Age	-	20	53	27	12.692^{a}	$.123^{NS}$	1	42	42	15	10.286^{a}	$.591^{NS}$
Gender	-	20	53	27	6.043^{a}	$*.049^{S}$	1	42	42	15	4.456^{a}	$.216^{NS}$
Marital status	-	20	53	27	4.184^{a}	$.123^{NS}$	1	42	42	15	1.324^{a}	$.723^{NS}$
Education	-	20	53	27	9.584^{a}	$.295^{NS}$	1	42	42	15	12.020^{a}	$.444^{NS}$
Occupation	-	20	53	27	13.337^{a}	$.345^{NS}$	1	42	42	15	16.956^{a}	$.526^{NS}$
Monthly Income	-	20	53	27	9.465^{a}	$.489^{NS}$	1	42	42	15	12.937^{a}	$.607^{NS}$
Presence of Anaemia	-	20	53	27	5.649^{a}	$.464^{NS}$	1	42	42	15	13.471^{a}	$.142^{NS}$
Frequency of HD	-	20	53	27	6.611^{a}	$.158^{NS}$	1	42	42	15	4.112^{a}	$.904^{NS}$
Duration of HD	-	20	53	27	$*.046^{aS}$	$.977^{NS}$	1	42	42	15	5.593^{a}	$.133^{NS}$

NS: Non-significant at p>0.05

Significant at p = 0.05

*** Significant at p=0.049**

NS: Non-significant at X^2>0.05

Significant at X^2 = 0.05

*** Significant at X^2=0.046[a]**

According to Table no 4 there was no significant statistical relationship proved with other selected demographic variables except gender in the experimental group study subjects and frequency of haemodialysis but logically positive relationship was determined and SD 0.662 during post haemodialysis period showed less increase in energy in control group study subjects. Similarly there was no significant statistical relationship proved with selected demographic variables in the control group study subjects but logically positive relationship is determined. Third objective and hypotheses of the study is achieved.

LIMITATIONS OF THE STUDY:

The number of sample (200) was limited because of shortage of time. Researcher had to work from morning till late evening for data collection.

DISCUSSION

The present study was conducted to assess the effectiveness of back and lower leg massage on fatigue among CKD patients undergoing haemodialysis. In order to achieve the objectives and hypothesis of the study, an experimental design was adopted and intervention was given to the experimental group study subjects. **The collected data was coded, organised, analysed and presented under the four sections.** The findings of the study have been discussed with reference to

the objectives and hypothesis and with the findings of other studies. The findings of the studies conducted by **Morsch etal. (2006), Mukadder Mollaoglu (2009) , T. Chandra (2011), Lee-O Bih etal (2007)**, **Liu H.E. (2006), Kang S.J. Kim (2008), Ching Cho et al. (2009)** and **Williams G Amy etal. (2007)** supported the findings of present study.

CONCLUSION:

From the present study the following conclusion has been drawn:-There is a mild to worst degree of fatigue present with low energy in CKD patients undergoing haemodialysis. Massage of body is effective to decrease fatigue and increase energy in CKD patients undergoing haemodialysis. Massage therapy leads to two folds decrease in fatigue (3.07 and SD was 0.685 during pre-interventional period and mean score 1.250 and SD was 0.520) and more increase in energy or vitality in experimental group study subjects. There was one fold decrease in fatigue (mean score 2.71 and SD 0.729 during pre- haemodialysis period and 2.08. These findings show that haemodialysis is also effective to some extent to decrease the level of fatigue. Haemodialysis is effective to decrease the fatigue and increase the energy or vitality among CKD patients undergoing haemodialysis. If the body massage is applied along with haemodialysis it is proved to be more effective as it is evident from the findings of present research study. So massage is beneficial as an alternate therapy for promotion of comfort and the person is energetic and can perform activities of daily living independently.

NURSING IMPLICATIONS

This study has demonstrated the effectiveness of massage on level of fatigue in CKD patients undergoing haemodialysis and indicates the importance of focusing on these aspects of care. The use of the some self report symptom used in this study actively involves the patients. It is important for nursing professional to determine their patients' level of fatigue and assist them in developing strategies for both conserving and building energy. The findings of the present study can be applied to nursing administration, nursing education, nursing practice, nursing research and to general public.

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