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A Study to Assess the Effectiveness of Foot Reflexology on Reduction of Post Hemodialysis Fatigue among Patients Undergoing Hemodialysis at Dialysis Units of Selected Hospitals of Bagalkot

Ms. Aishwarya, P. C[1*], Prof. Varesh G. Chilapur[2], Dr. Deelip S. Natekar[3]

[1]MSc 2nd Year Student, Department of Medical Surgical Nursing, Shri B.V.V.S Sajjalashree Institute of Nursing Sciences Navanagar, Bagalkot-58703, Karnataka, India
[2]Professor and HOD, Department of Medical Surgical Nursing, Shri B.V.V.S Sajjalashree Institute of Nursing Sciences Navanagar, Bagalkot-58703, Karnataka, India
[3]Principal, Department of Community health Nursing B.V.V.S Sajjalashree Institute of Nursing Sciences Navanagar, Bagalkot-58703, Karnataka, India

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***Corresponding author:** Ms. Aishwarya, P. C
MSc 2nd Year Student, Department of Medical Surgical Nursing, Shri B.V.V.S Sajjalashree Institute of Nursing Sciences Navanagar, Bagalkot-58703, Karnataka, India

Abstract **Original Research Article**

Background of the study: Is a process in which waste materials in the blood are filtered through a semipermeable membrane and removed from body with replacement of renal function. Patients undergone for Haemodialysis will experience a major most frequent complaint as Fatigue. Hence the researcher developed foot Reflexology intervention on reduction of Fatigue. Hence the researcher interested to conduct an experimental study with an aim to reduce the fatigue among the post haemodialysis patients. ***Aim*:** the aim of study was to assess the effectiveness of foot reflexology on reduction of post haemodialysis fatigue among patients undergoing haemodialysis at dialysis units of selected hospitals of Bagalkot. ***Methodology*:** The research design selected for this study was quasi experimental one group pre-test post-test design. The sample size comprises of 50 post haemodialysis patients admitted in dialysis unit of BVVS HSK hospital of Bagalkot. The sampling technique adopted for this study will be probability simple random sampling technique. In the present study the data will be collected by using standardized fatigue assessment scale, the data analysis done by using descriptive and inferential statistics in terms of frequency distribution, percentage, mean, mean percentage, Standard Deviation, paired 't' test and Chi-square test. ***Result*:** The finding revealed that there is statistical significance different found between mean pre-test and post test scores [Z=5.6454(P value=0.00001)] and mean post-test level of fatigue will be significantly lower than the mean pre-test level of fatigue among post haemodialysis patients, A significant association was found between pre-tests scores with selected socio-demographic variables. ***Conclusion***: The study proved that administration of foot reflexology techniques on reduction of fatigue was effective, scientific and Logical.

Keywords: Assess, effectiveness, foot reflexology techniques, fatigue.

INTRODUCTION

Chronic kidney disease is the most common type of kidney disease. Chronic kidney disease translates to a long-term condition of this organ, which does not improve over time. High blood pressure and diabetes cause this. Glomerulonephritis – Glomeruli are extremely small structures inside the kidneys, and they help in blood filtration. Glomerulonephritis is an inflammation of the glomeruli. Congenital abnormalities, infections or drugs cause it Kidney stones. When minerals and other substances in the blood crystallize they form solid masses known as kidney stones. Kidney stones usually come out of the body during urination. Polycystic kidney disease – It is a genetic disorder that causes numerous cysts in the kidneys. These cysts interfere with the functionality of the kidneys and cause kidney failure. Urinary tract infections – Bacterial infections of any part of the urinary system is known as urinary tract infections (UTIs).

The term dialysis is derived from the Greek words dia, meaning "through", and lysis meaning "loosening or splitting". It is a form of renal replacement therapy, where the kidney's role of filtration of the blood is supplemented by artificial equipment, which removes

excess water, solutes, and toxins. Dialysis ensures maintenance of homeostasis (a stable internal environment) in people experiencing a rapid loss of kidney function i.e., acute kidney injury (AKI), or a prolonged, gradual loss that is chronic kidney disease (CKD). It is a measure to tide over acute kidney injury, to buy time until a kidney transplant can be carried out, or for sustaining those ineligible for it.

Fatigue is one of the most frequent complaints of dialysis patients and is associated with impaired health-related quality of life (HRQOL). The prevalence of fatigue ranges from 60% to as high as 97% in patients on long-term renal replacement therapy. 1–7 The importance of fatigue to patients with kidney disease is underscored by the observation that 94% of hemodialysis patients endorsed a willingness to undergo more frequent dialysis if there would be an associated increase in energy level. Despite the importance of fatigue to patients, health care providers remain largely unaware of both the presence and severity of fatigue among dialysis patients.

Reflexology is a systematic practice in which applying some pressure to any particular points on the feet and hands give impacts on the health of related parts of the body. Each point of the pressure acts as the sensors on the feet and hands and is links with different parts of body specifically. These sensors will be stimulated by applying the reflexology technique in order to improve the blood and energy circulation, give sense of relaxation, and maintain the homoeostasis. Reflexology session can be improved by other elements such as aromatherapy, peaceful music, and good environment settings. There is a term in reflexology called reflex zone therapy. Reflex zone therapy is where the body is divided into ten longitudinal zones from head to toe. In the reflex zone therapy, there are five zones on both sides of the body in which each zone diverge down the particular arm, and also continue straight down the body and down the particular leg to line up with a toe on the respective foot. Practitioners usually choose the suitable technique to be applied to the reflex zone therapy to gain optimized efficiency and impact. Reflexology is a complementary therapy instead of an alternative therapy to other treatments which patient already has based on reflexology maps.

Hence researcher has planned to undertake “a study to assess the effectiveness of foot reflexology on reduction of post hemodialysis fatigue among patients undergoing hemodialysis at dialysis units of selected hospitals of Bagalkot.

MATERIAL AND METHODS

Study design and participants

Present study was Quasi-experimental one group pre-test and post-test design. A sampling technique adopted for this study will be simple random technique by using lottery method was used to select the 50 subjects for the present study. Post haemodialysis patients and who were able to understand read and write Kannada or English and available at the time of data collection are selected for the study. In the present study the data will be collected by using tool of Fatigue assessment scale with their scoring.

Instruments

Fatigue Assessment Scale (FAS)

Fatigue Assessment Scale (FAS) will be used to assess the level of fatigue among post haemodialysis patients. The FAS is a 10 item evaluating symptoms of chronic fatigue. It consists of 10 statements, consists of categories. Each item of the FAS is answered using a five-point, Likert-type scale ranging from (1=never, 2=Sometimes, 3=Regularly, 4=Often, 5=always). Items 4 and 10 reverse-scored. Total scores can range from 10, indicating the lowest level of fatigue to 50 denoting the highest. Scale was translated to Kannada and then back translated to English. The reliability of the test was found out by using Karl Pearson’s co-efficient of correlation formula. The reliability co-efficient for fatigue assessment scale obtained was r = 0.92.

Data Collection Procedure

The data collection was carried out from 15-7-2023 to 29-7-2023. Permission was obtained from the Medical superintendent, B.V.V.S. HSK Hospital & Research Centre Navanagar, Bagalkot. The investigator administered the tool to those who were willing to participate, after introducing and explaining the purpose of the study. On 1st day, the pre test sociodemographic characteristics was collected by the post haemodialysis patients, fatigue was assessed by Fatigue assessment scale (FAS). Foot reflexology intervention was given for a group of 6-8 dialysis patients for a period of 5 days, once a daily and 10 minutes each foot. 7th day, the investigator administered post test and assessed the fatigue level with the same scale. However the researcher has not faced any difficulty during the data collection process.

Data Analysis

Data will be analysed by using descriptive and inferential statistics. Numerical data obtained from the sample was organized and summarized with the help of descriptive statistics like percentages, mean and standard deviation. Chi-square test used to find out association between the pre-test level of fatigue on foot reflexology with their selected socio-demographic variables among post haemodialysis patients.

RESULTS

Description of socio-demographic characteristics of subjects

Percentage wise distribution among post hemodialysis patients, the Majority (48%) of the hemodialysis patients were in the age group of 41-50 years, Majority of hemodialysis patients were males (56%), majority of hemodialysis patient were about

(36%) had primary education, majority of patient hemodialysis patient were Hindu (70%), majority of hemodialysis patients (56%) were belongs to Nuclear family, marital status of hemodialysis patient in which (62%) were married and the occupation status of the hemodialysis patient (52%) were employees, diet of hemodialysis patients, majority (76%) of were having vegetarian diet, regular exercise of hemodialysis patient were (56%) have not practised.

Assessment of pre-test and post-test level of fatigue among post hemodialysis patients

Table 1: Assessment of Mean, SD and paired 't' test of Pre and post test scores towards reduction of fatigue among post haemodialysis patients, N=50

Level of Fatigue	Mean	SD	Mean Diff.	SD Diff.	t-value	p-value
Pre-test	35.38	8.28	14.10	8.08	12.3327	0.0001*
Post-test	21.28	4.60				

*p<0.05

Findings related to the significance difference between mean post test and mean pre test scores of post hemodialysis patients shows that mean pre test (35.38) with SD 8.28 and mean post test (21.28) with SD 4.60, was found to be statically significant at 0.05 level of significance [t = 12.3327 (p valve= 0.001), p < 0.05]. Hence as per the above stated findings it is clear that, there is a statically significant difference between pre test and post test mean fatigue score among post hemodialysis patients.

Hence it is clear that there is a statistically difference between mean post-test level of fatigue and mean pre-test level of fatigue among post hemodialysis patients.

Hence H_1 is accepted.

Evaluation of the Effectiveness of Foot Reflexology on Reduction Of Fatigue Among Post Haemodialysis Patients.

Table 2 Comparison between Pre test and post test levels of fatigue score reduction of fatigue among post haemodialysis patients. N=50

Table 2: **Findings about the comparison of level of fatigue of post haemodialysis patients**

Levels of fatigue	Pretest		Posttest	
	No	%	No	%
No Fatigue	7	14.00	37	74.00
Fatigue	10	20.00	13	26.00
Extreme fatigue	33	66.00	0	0.00
Total	50	100.00	50	100.00
Wilcoxon matched pairs test, Z=5.6454, p=0.0001*				

In pre test, the patients with no fatigue were 7 (14%), with a fatigue 10 (20%), with extreme fatigue 33(66%). In post test, the patient with no fatigue were 37 (74%), with a fatigue 13 (26%), with a extreme fatigue were zero out of 50 subjects. The above stated results clearly suggest that post haemodialysis patient's level of fatigue was reduced in post test, as compared to the level of fatigue in pre test. Thus the administration of foot reflexology intervention program was successful in reducing the level of fatigue among post haemodialysis patients.

Association between levels of pre test stress with their selected socio-demographic Variables

Table 3: Association between pretest levels of fatigue with clinical variables of respondent, N=50

Profile	Pretest levels of fatigue						Total	%	Chi-square	p-value
	No Fatigue	%	Fatigue	%	Extreme fatigue	%				
Age groups										
31-40years	2	25.0	2	25.0	4	50.0	8	16.0	2.8270	0.5870
41-50years	3	12.5	3	12.5	18	75.0	24	48.0		
51- 60years	2	11.1	5	27.8	11	61.1	18	36.0		
Gender										
Male	1	3.6	4	14.3	23	82.1	28	56.0	8.4950	0.0140*
Female	6	27.3	6	27.3	10	45.5	22	44.0		
Education										
No formal education	1	14.3	0	0.0	6	85.7	7	14.0	25.5220	0.0010*

Profile	Pretest levels of fatigue						Total	%	Chi-square	p-value
	No Fatigue	%	Fatigue	%	Extreme fatigue	%				
Primary education	1	5.6	0	0.0	17	94.4	18	36.0		
Secondary school	3	23.1	3	23.1	7	53.8	13	26.0		
Higher secondary	0	0.0	3	50.0	3	50.0	6	12.0		
Graduate & above	2	33.3	4	66.7	0	0.0	6	12.0		
Religion										
Hindu	3	8.6	4	11.4	28	80.0	35	70.0	10.4950	0.0330*
Muslim	3	30.0	4	40.0	3	30.0	10	20.0		
Others	1	20.0	2	40.0	2	40.0	5	10.0		
Type of family										
Nuclear	3	10.7	2	7.1	23	82.1	28	56.0	8.2630	0.0160*
Joint	4	18.2	8	36.4	10	45.5	22	44.0		
Marital status										
Married	5	16.1	6	19.4	20	64.5	31	62.0	2.4200	0.6590
Unmarried	0	0.0	2	20.0	8	80.0	10	20.0		
Divorced /Widow	2	22.2	2		5	55.6	9	18.0		
Occupation										
Housewife	3	11.5	5	19.2	18	69.2	26	52.0	3.2790	0.5120
Employee	2	10.5	4	21.1	13	68.4	19	38.0		
Coolie	2	40.0	1	20.0	2	40.0	5	10.0		
Diet										
Vegetarian	7	18.4	6	15.8	25	65.8	38	76.0	3.6150	0.1640
Mixed	0	0.0	4	33.3	8	66.7	12	24.0		
Regular exercise										
Yes	5	22.7	7	31.8	10	45.5	22	44.0	7.3930	0.0250*
No	2	7.1	3	10.7	23	82.1	28	56.0		

Findings related to the association between pre test level of fatigue scores of post hemodialysis patients regarding reduction of fatigue with their selected Clinical variables reveals that there was significant association found between score of Duration period of hemodialysis ($\chi 2=12.3260$, P=0.0150), Frequency of treatment ($\chi 2=16.8030$, P=0.0020), Fatigue restrict your activities ($\chi 2=7.0880$, P=0.0290), Comorbid Illness ($\chi 2=1.9390$, P=0.3790). No significant association found between fatigue score and other Clinical variables.

Hence H2 is accepted for gender, education, religion, regular exercise and type of family and rejected for others.

DISCUSSION

The findings were supported by study conducted by V. Nisha (2014), to assess the Effectiveness of foot reflexology on pain among patients with osteoarthritis. The study results showed that, on analysis of frequency and percentage distribution of demographic variables, majority of the patients 11 (36.66%) were between the age group of 56-65 years and 66-75 years among osteoarthritis patients in experimental group, whereas in the control group 11(36.66%) of subjects were between the age group of 66-75 years. With regard to sex classification, majority of patients 17 (56.66%) were female in the experimental group, whereas in the control group male and females were 15(50%) of subjects. With respect to education, majority of the patients 14 (46.66%) were having primary education in the experimental group, whereas in the control group 13(43.33%) of subjects were having primary education. With regard to occupation, majority of patients 15 (50%) were belongs to moderate worker in the experimental group, whereas in the control group 14(46.66%) of subjects were belongs to moderate worker. With regard to food habits, majority of patients 17(56.66%) of them were vegetarian, in the experimental group, whereas in the control group 16(53.33%) of subjects were non vegetarian. Regarding the body weight of osteoarthritis, majority of patients 15(50%) were normal body weight in the experimental group and 14(46.66%) were normal body weight in the control group. Regarding the history of trauma, majority of patients, 17(56.66%) of them were do not have any history of trauma in the experimental group. whereas in the control group, majority of patients 16(53.33%) of them were have history of trauma.

RECOMMENDATIONS

- Similar study can be conducted to assess the effectiveness of foot reflexology on reduction of fatigue. Similar type of study can be conducted for a large group.
- Similar study can be conducted as a comparative study between interventional methods.

CONCLUSION

After thorough analysis of the data, it is understood that reduction of fatigue are co related and interventions like foot reflexology techniques helpful among post hemodialysys patients to enhance their quality of life and reduce their fatigue. The effectiveness of foot reflexology on reduction of post hemodialysis fatigue among patients undergoing haemodialysis mean score pre-test [35.38] with SD 8.28 and mean post-test [21.28] with SD 4.60. Hence it is clear that there is a statistically difference between mean post-test level of fatigue and mean pre-test level of fatigue among post hemodialysis patients.

Ethical Consideration

The study was approved by the Institutional Ethical Clearance Committee, BVVS Sajjalashree Institute of Nursing Sciences, Bagalkot.

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Conflicts of Interest: There are no conflicts of interest.

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REFERENCE

- Kidney diseases: List of kidney diseases, causes, symptoms, treatments & care. Digit Insurance. August 19, 2022.
- Lameire, N., & Van Biesen, W. (2010). The initiation of renal-replacement therapy: Just-in-time delivery. *New England Journal of Medicine*, *363*(7), 678-680.
- Jhamb, M., Weisbord, S. D., Steel, J. L., & Unruh, M. (2008). Fatigue in patients receiving maintenance dialysis: a review of definitions, measures, and contributing factors. *American Journal of kidney diseases*, *52*(2), 353-365.
- Traditional and Complementary Medicine Division. Ministry of Health Malaysia; 2011. Practice Guideline on Reflexology for Reflexologist Practicing in Malaysia. Available from: Accessed 03.05.15.