Effectiveness of Foot Reflexology on Anxiety among Hemodialysis Patients

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Abstract

Introduction: The most common mental health problems of patients undergoing hemodialysis, suffering from end-stage renal disease (ESRD) are anxiety and depressive disorders. **Aim**: To assess the effectiveness of foot reflexology on anxiety among hemodialysis patients. **Material & Methods:** A quasi-experimental pretest posttest control group design was used. 302 patients underwent hemodialysis were selected from two hemodialysis center. Foot reflexology given for 2 weeks in an alternative day. Researcher used Zung Anxiety Rating Scale for assessing the anxiety of hemodialysis patients. **Results:** In the study group the pre-test mean was 71.09 with SD of 10.10 reduced to 45.82 with SD 7.26 in the post-test III which gives the evidence that there was a significant difference between the observations $P<0.001$ on patient's level of anxiety. In the control group the pre-test mean was 70.44 with SD of 10.28 and the posttest III mean was 68.52 with SD 11.96 which shows that there was no significant difference between pre and posttest observations on patient's level of pain. **Conclusion:** The study concluded that foot reflexology is a simple, easy and cost effective intervention. Regular practice of foot reflexology alleviate the physiological and psychological problems of patients subjected to hemodialysis thereby improve the quality of life of the patients.

INTRODUCTION:

Chronic kidney disease (CKD) is a long standing debilitating medical condition. CKD patients who are undergoing hemodialysis commonly experience depressive and anxiety symptoms because of various physical and psychosocial factors.

Anxiety and depression are common psychiatric disorders among patients undergoing hemodialysis. [1,2]. Several factors seem to trigger anxiety and depression in hemodialysis patients such as co-morbidities, frequent hospitalizations [3], chronic pain, sleep disturbances [4], chronic inflammation, increased fatigue, decreased sexual functioning [5], uremia [6], failure of family support restrictions in daily life, non-compliance to therapeutic regimen including restrictions in diet and fluids, and dependency upon treatment and health professionals [7].

The most common mental health problems of patients undergoing hemodialysis, suffering from end-stage renal disease (ESRD) are anxiety and depressive disorders. 12% to 52% of hemodialysis patients experience anxiety during dialysis. Hemodialysis requires the patient to adapt to certain restrictions, such as the control of diet, fluid intake, chronic pain and discomfort associated with puncturing the arteriovenous fistula on the day of dialysis. Other somatic ailments are also involved often with numerous accompanying disorders, frequent hospital stays, as well as more frequent injuries during the patient's weakened state after dialysis. Also, problems in daily functioning, and fear of the future undoubtedly influence the onset of symptoms of anxiety[8].

OBJECTIVE:

To evaluate the effectiveness of foot reflexology on anxiety among hemodialysis patients.

METHODS & MATERIALS

Researcher adopted a quasi-experimental pretest posttest control group design. Formal permission was obtained from Institutional Ethical Committee of Mahatma Gandhi Medical College & Research Institute, Puducherry. The formal setting permission was obtained from the Directors of two Dialysis Centers from Puducherry. 302 hemodialysis patients (Experimental -151, Control -151) undergoing hemodialysis were selected for the study.

A brief introduction about the self and study were given and data was collected from the patients. Written informed consent was obtained from the patients and confidentiality of the responses was assured. After selection of samples, the investigator assessed the pretest level of anxiety in both the experimental and control groups using a Zung Anxiety Rating Scale. Foot reflexology is administered for 6 cycles in duration of 40 minutes by the investigator for the experimental group and the control group were received no intervention. The posttest level of anxiety was assessed by the investigator for the experimental and control groups after two weeks of intervention.

Statistical analysis: Statistical analysis was performed using the Statistical Package for Social Sciences Programme (SPSS) version 17.0. Descriptive statistics and inferential statistics such as Student's independent T-test, Chi square test, and Oneway Repeated measures ANOVA F-test was used for analysis.

RESULTS AND DISCUSSION:

In the pretest of the study group, 16(10.60%) had mild to moderate anxiety, 32(21.19%) had moderate to severe anxiety and 103(68.21%) had extreme anxiety. In posttest 3, 40(26.49%) of them were normal, 111(73.51%) had mild to moderate anxiety and none of them had moderate to severe anxiety and extreme anxiety.

The chi square value of posttest 1($\chi2$=52.59, p=0.001), posttest 2($\chi2$=114.33, p=0.001) and posttest 3($\chi2$=228.00, p=0.001) revealed that there was high level statistically significant difference between the study and control group which showed that the foot reflexology had significantly reduced the anxiety among patients subjected to hemodialysis in study group.

Results revealed that the hemodialysis patient's anxiety was significantly reduced from 71.09 mean score to 45.82 during posttest III which was highly significant at p <0.001in the study group.

Table I: Anxiety among hemodialysis patients

Assessments	Anxiety level	Experiment (n=151)		Control (n=151)		Chi-square test
		n	%	n	%	
Pretest	Normal	0	0.00	0	0.00	$\chi2$=0.67 p=0.72 not significant
	Mild to Moderate	16	10.60	15	9.93	
	Moderate to Severe	32	21.19	38	25.17	
	Extreme	103	68.21	98	64.90	
Posttest-1	Normal	11	7.28	0	0.00	$\chi2$=52.59 p=0.001*** significant
	Mild toModerate	55	36.42	18	11.92	
	Moderate to Severe	47	31.13	41	27.15	
	Extreme	38	25.17	92	60.93	
Posttest-II	Normal	22	14.57	0	0.00	$\chi2$=114.33 p=0.001*** significant
	Mild to Moderate	82	54.30	21	13.91	
	Moderate to Severe	33	21.85	40	26.49	
	Extreme	14	9.27	90	59.60	
Posttest-III	Normal	40	26.49	0	0.00	$\chi2$=228.00 p=0.001*** significant
	Mild to Moderate	111	73.51	22	14.57	
	Moderate to Severe	0	0.00	41	27.15	
	Extreme	0	0.00	88	58.28	

Table II: Comparison of pretest and posttest score of anxiety in the study and control group

Anxiety score	Group				Mean Difference	Student independent t=test
	Experiment(n=151)		Control(n=151)			
	Mean	SD	Mean	SD		
Pretest	71.09	10.10	70.44	10.28	0.65	t=0.55　　P=0.58 df=300 (NS)
Posttest-I	64.47	12.86	70.00	13.99	-5.53	t=3.57　P=0.001*** df=300 (S)
posttest-II	55.36	9.04	68.93	12.04	-13.57	t=11.07P=0.001*** df=300 (S)
Posttest-III	45.82	7.26	68.52	11.96	-22.70	t=19.94 P=0.001*** df=300 (S)

P≤0.05 significant P>0.05 not significant P≤0.01 highly significant P≤0.001 very high significant

Table III: Mean difference sore of anxiety between study and control group

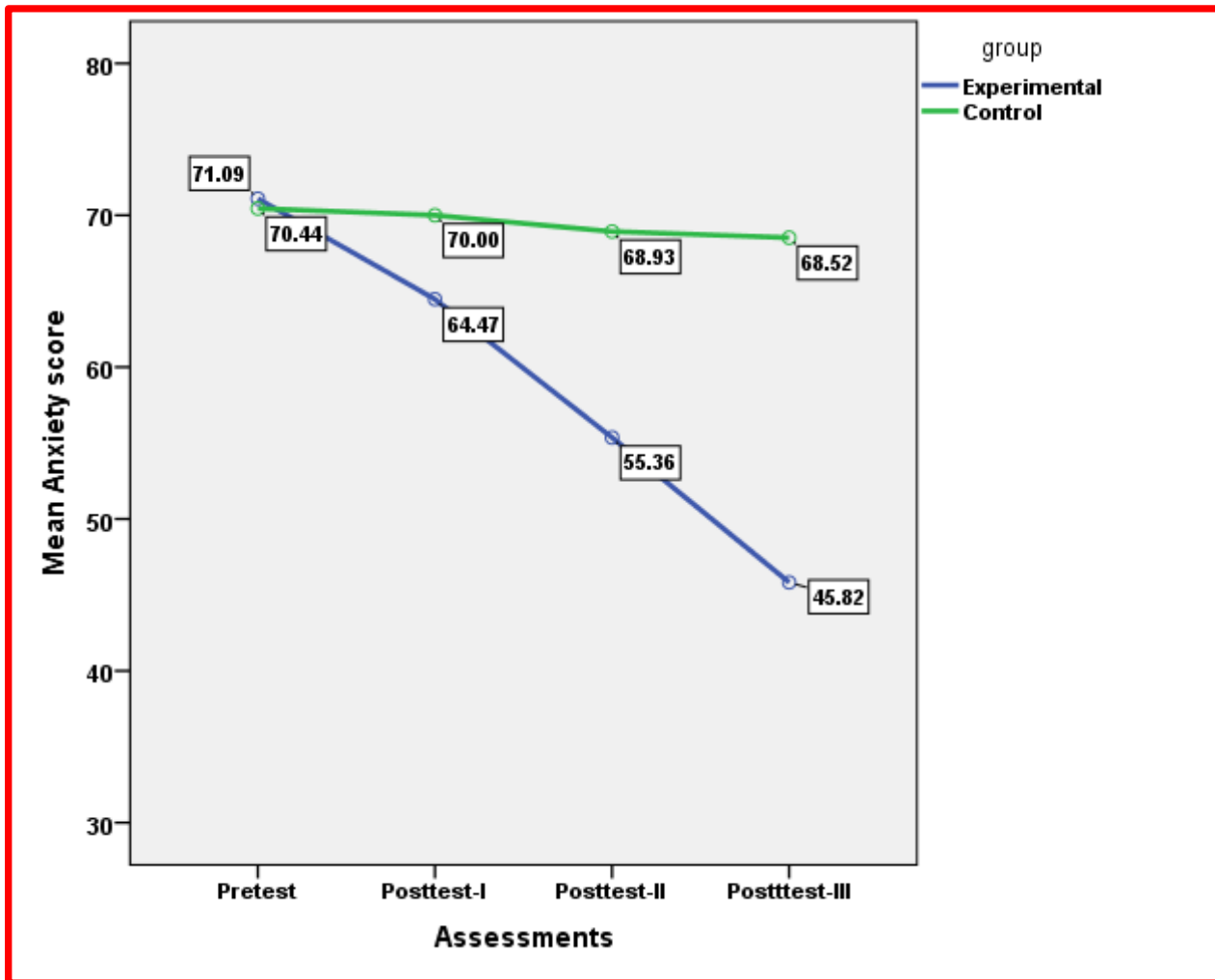| | Pretest | | Posttest-I | | Posttest-II | | Posttest-III | | Mean difference | Oneway Repeated measures ANOVA F-test |
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Experiment	71.09	10.10	64.47	12.86	55.36	9.04	45.82	7.26	25.27	F=140.34 p=0.001*** (S)
Control	70.44	10.28	70.00	13.99	68.93	12.04	68.52	11.96	1.92	F=1.92 p=0.16 (NS)

Figure I: Comparison of mean percentage of anxiety reduction score with 95% confidence interval between study and control group

The study finding is consistent with the study conducted by Mosleh H, Alenezi M regarding prevalence and factors of anxiety and depression in chronic kidney disease patients undergoing hemodialysis in Al-Madinah, Saudi Arabia. A total of 122 hemodialysis patients were included. Hospital Anxiety and Depression scale questionnaire was used. Results revealed that 19.7% patients had anxiety symptoms. Anxiety symptoms were more prevalent among females than males[9].

Another study conducted by Gadia P, Awasthi A on depression and anxiety in patients of chronic kidney disease undergoing hemodialysis in Western Rajasthan. A total of 100 hemodialysis patients were included. Hospital Anxiety and Depression scale (HADS) was used to collect the data. The prevalence of anxiety disorder among chronic kidney disease patients was around 61% respectively. Anxiety was significantly associated with gender, occupation, income and duration of hemodialysis in these patients. The study concluded that clinicians should focus on these morbidities while managing such patients and provide holistic treatment using multidisciplinary approaches to improve the overall quality of life[10].

Another study conducted by Wang W, Hung H, Chen Y, Chen K, Yang S, Chu C, Chan Y (2020) conducted a systematic review, meta-analysis, and metaregression of randomized controlled trials on effect of foot reflexology intervention on depression, anxiety, and sleep quality in adults. Electronic databases were searched till August, 10, 2020, and the validity of the eligible studies was critically appraised. Results revealed that twenty-six randomized controlled trials involving 2,366 participants met the inclusion criteria. The meta-analyses showed that foot reflexology intervention significantly improved adult depression (Hedges'g $= -0.921$; 95% CI: -1.246 to -0.595; $p < 0.001$), anxiety (Hedges' g $= -1.237$; 95% CI -1.682 to -0.791; $p < 0.001$), and sleep quality (Hedges' g $= -1.665$; 95% CI -2.361 to -0.970; $p < 0.001$). The study concluded that foot reflexology may provide additional nonpharmacotherapy intervention for adults suffering from depression, anxiety, or sleep disturbance[11].

CONCLUSION:

The study concluded that foot reflexology is a simple, easy and cost effective intervention. Regular practice of foot reflexology alleviate the physiological and psychological problems of patients subjected to hemodialysis thereby improve the quality of life of the patients.

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