



# A STUDY TO ASSESS THE EFFECTIVENESS OF WARM WATER FOOT BATH ON LEVEL OF FATIGUE AMONG THE STUDY SUBJECTS UNDERGOING HEMODIALYSIS AT DEEPAK HOSPITAL IN JALNA, MAHARASHTRA.

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**ABSTRACT:** The goal of the study was to determine effect of warm water foot therapy on level of fatigue among the hospitalized patient at Deepak Hospital in Jalna, Maharashtra state. 40 study subjects were selected by using non-probability convenience sampling technique. A semi structured questionnaire was prepared to obtain the demographic profile, contributing as age, gender, education, occupation, family income, duration of illness, family history of renal disease. On first day, the student researcher has explained regarding the benefit of the intervention to the study subjects. On the 1<sup>st</sup> day pre-test was done using Fatigue Assessment Scale before intervention. After the pre-test student researcher had going the intervention of warm water foot bath therapy for 15 minutes after haemodialysis. The student researchers advised the subjects to practice the therapy for 7 consecutive days for 2 times in a day. On the 7<sup>th</sup> day post-test was done by Fatigue Assessment Scale. The result showed that there is significant difference between the level of fatigue among the subjects in the experimental group and in the control, group undergoing hemodialysis.

## INTRODUCTION

The kidneys purify about 200 liters of blood every day and produce about 2 liters of urine. Kidney diseases are silent killers which largely affect the quality of life.

According to Kidney Wales foundation in UK, more than 500 million people are affected by renal diseases worldwide approximately 1 in 10 adults have some form of kidney damage. Chronic kidney disease having 5 stages, with stage 1 being the mildest and usually causing few symptoms and stage 5 being a severe illness with poor life expectancy if untreated. Stage 5 CKD is often called End Stage Renal Disease (ESRD). End stage renal disease represents a major problem for public health.

Fatigue is documented as a negative symptom experienced by a large number of study subjects with end stage renal disease undergoing hemodialysis.

When warm water foot bath therapy is applied at a 40°C to 42°C temperature to the body, the capillary vessels dilate and become flaccid and exhibit signs of loss of tension, it also increases the circulation and relaxes the muscles and tissues. It acts as effective method of relaxation, since it also increase sympathetic activity and increases white blood cells and natural killer cells.

Untreated fatigue may impact greatly on quality of life, leading to increased dependence on others, weakness, increased physical and mental energy, social withdrawal and depression. This study evaluates the efficacy of warm water foot bath on the level of fatigue.

## NEED FOR THE STUDY

According to **United States International Conference Report (2016)**, approximately 1 in 1,000 people are getting treated for ESRD, and greater than 19 million adults are living with some type of chronic kidney diseases.

According to **Renal Data System Annual Data Report in U.S, (2016)**, more than 660,000 Americans are being treated for kidney failure, also called end stage renal disease, or ESRD. Of these, 468,000 are dialysis study subjects, more than 193,000 have a functioning kidney transplant. More than 650,000 study subjects per year in the United States and an estimated 2 million study subjects worldwide are affected by End Stage Renal Disease (ESRD). ESRD is increasing in the United States by 5% per year.

As according to **United States Renal Data System (2016)**, annual data report prevalence rate for kidney dialysis is approx. 1 in 320 or 26% or 477,458 people in USA.

According to **International Conference Report (2016)**, in Canada, approximately 1.9 to 2.3 million people suffers from chronic kidney disease.

According to **Home and Health Statistics Report (2016)**, in India, one in 10 persons in the general population is estimated to have some form of chronic kidney disease. About 175,000 new people have kidney failure (Stage V CKD) every year in India, requiring dialysis and/or kidney transplantation.

A survey conducted by the **Dialysis Trust of Karnataka (2015)**, states that every month nearly 22,000 study subjects register for dialysis in Bangalore and there are around 6000 study subjects with renal failure who could use renal dialysis.

**National Kidney Foundation (2014)**, stated that the kidney diseases rank third among the life-threatening diseases and estimates approximately 200,000 people in India go into terminal kidney failure annually and millions more suffer lesser forms of kidney disease.

**Cho J, Lee J, Han M (2011)**, conducted an experimental study to evaluate the effectiveness of warm water foot bath and foot reflexology on fatigue and pain among the 33 Chronic Renal Failure study subjects by using multi-dimensional fatigue and pain scale assessment. The study revealed that the post test score of fatigue and pain is reduced. The study concluded that warm water foot bath and foot reflexology had effective in reducing level of fatigue and pain.

## STATEMENT OF THE PROBLEM

A study to assess the effectiveness of warm water foot bath on level of fatigue among the study subjects undergoing hemodialysis at Deepak hospital in Jalna, Maharashtra.

## OBJECTIVES

- To assess the pre-test level of fatigue among the study subjects undergoing hemodialysis in the control group and experimental group.
- To assess the post-test level of fatigue among the study subjects undergoing hemodialysis in the control and experimental group.
- To evaluate the effectiveness of warm water foot bath on level of fatigue among the study subjects undergoing hemodialysis in the experimental group.
- To associate the pre-test level of fatigue among the study subjects undergoing hemodialysis in the control and in the experimental group with selected demographic variables.

## HYPOTHESES

**H<sub>1</sub>**: - There is a significant difference between the level of fatigue among the study subjects in the control and in the experimental group undergoing hemodialysis.

**H<sub>2</sub>**: - There is a significant association between the pre-test level of fatigue among the study subjects undergoing hemodialysis with their selected demographic variables in the control and experimental group.

## RESEARCH METHODOLOGY

### Research Approach

A quantitative approach is adopted for the present study it is used to determine the effectiveness of warm water foot bath on level of fatigue among the study subjects undergoing hemodialysis.

### Research Design

Quasi-experimental pre-test post-test design with control group was adopted to evaluate the effectiveness of warm water foot bath on level of fatigue among the study subjects undergoing hemodialysis.

### Population

The study population are subjects who were undergoing hemodialysis.

Target Population: -The target population was subjects who were undergoing hemodialysis in dialysis unit .

Accessible Population: -The target population was subjects who were undergoing hemodialysis in dialysis unit in Deepak Hospital at Jalna Maharashtra.

## SAMPLING

### Sample Size

Sample size was 40 study subjects undergoing hemodialysis in Deepak hospital at Jalna who fulfilled the inclusion criteria among the 40 subjects 20 of them were in the experimental group and 20 subjects were in the control group.

### Sampling Technique

Non-probability convenience sampling technique was adopted for this study.

## CRITERIA FOR SAMPLE SELECTION

### Inclusion Criteria:

Study subjects who were:

- undergoing hemodialysis with moderate and severe fatigue.
- undergoing hemodialysis through jugular venous catheter and AV fistula.
- in the age between 20-70 yrs.
- who can understand the Marathi, Hindi and English language.

### Exclusion Criteria:

Study subjects who were:

- unconscious.
- not willing to participate.
- with peripheral vascular diseases and skin disorders of the feet and legs.
- with sensory deficit.
- with any foot ulcer and Type 2 Diabetes Mellitus.
- diagnosed as Stroke.

## Variables.

### Dependent Variable

In this study the dependent variable was the level fatigue among the study subjects undergoing hemodialysis.

### Independent Variable

In this study independent variable was warm water foot bath.

### Description of the Tool

The tool was prepared in English after extensive review of literature and expert's opinion. Fatigue Assessment Scale was used to assess the level of fatigue.

It consists of Section A and Section B

**Section- A Demographic Variables:** This section consists of structured interview questionnaire (English) which seek information regarding demographic data such as age, gender, education, occupation, monthly income, first dialysis taken, duration of illness, duration of dialysis, any other associated medical condition, family history of renal diseases.

**Section-B Fatigue Assessment Scale:** The FAS is a 10-item scale evaluating symptoms of chronic fatigue. In contrast to other similar measures, FAS treats fatigue as a unidimensional construct and does not separate its measurement into different factors. However, in order to ensure that the scale would evaluate all aspects of fatigue, developers chose items to represent both physical and mental symptoms.

**-Helen J. Michelsen (1968)**

## Fatigue Assessment Scale

Each item of the “FAS” is answer using a five-point, Likert-type scale ranging from 1 (“never”) to (“always”). Items 4 and 10 are reversed-scored. Total score can range from 10, indicating the lowest level of fatigue, to 50 denoting the highest.

### Score Interpretation

Sr. No	Level of fatigue	Score	Percentage
1.	Mild Fatigue	10-16	10%-32%
2.	Moderate Fatigue	17-32	33%-64%
3.	Severe Fatigue	33-50	65%-100%

### DATA COLLECTION PROCEDURE

The data collection procedure was done for a period of 1 week in dialysis unit of Deepak Hospital in Jalna. Permission to conduct the study was obtained from the Chairman, Head of the nephrology department and unit in-charge of dialysis unit. The subjects were informed by the researcher about the nature and purpose of the study. Informed written consent was obtained as per the rule on day 1 by using Fatigue Assessment Scale to evaluate the level of fatigue among the study subjects undergoing hemodialysis in both the groups followed by administration of warm water foot bath only for experimental group after 20 minutes of dialysis for 15 minutes. The study subjects were advised to continue the same treatment for 7 consecutive days. Post-test was taken on 7<sup>th</sup> day.

#### Method of Data Analysis

- ❖ **Paired T Test:** this test is used to identify the significant difference in pre-test post-test level of pain among the study subjects undergoing hemodialysis between the control and the experimental group.
- ❖ **Chi-Square Test:** This test was use to assess the association between the demographic factors and pre-test level of fatigue among the study subjects undergoing hemodialysis in the control group and in the experimental group.

### RESULTS

The statistical the paired t test was applied to compare difference between average scoring of before and after warm water foot bath. It was found that, the paired ‘t’ test value was 12.186\* at the level of P 0.05. Since P value is less than 0.05 (‘p’ value < 0.0001) difference in scores is statistically significant. Researcher conclude at 5% level of significance and 19 degrees of freedom that the above data gives sufficient evidence to conclude that after receiving warm water foot bath among the haemodialysis study subjects there is a significant difference between the level of fatigue in pre and post-test in experimental group and control group The pre and post-test scores was recorded and mean and standard deviation of the test scores are calculated. The paired ‘t’-test was applied to compare difference between average scoring of before and after warm water foot bath. It was found that, the paired ‘t’ test value was 12.186\* at the level of ‘p’ < 0.05. Since ‘p’ value is less than 0.05 (‘p’ value < 0.0001) difference in scores is statistically significant. Researcher conclude at 5% level of significance and 19 degrees of freedom that the above data gives sufficient evidence to conclude that after receiving warm water foot bath among the haemodialysis study subjects in experimental group is effective in reducing fatigue. Hence hypothesis  $H_1$  was accepted.

With regard to the association between the pre-test level of fatigue with selected demographic variables in the control group and in the experimental group, the study findings revealed that in the control group there was a significant association between level of fatigue with occupation, duration of illness, and any associated medical condition. where as in the experimental group there was a significant association between level of fatigue and any other associated medical condition in the demographic variable in order to compute the association between the level of stress and demographic variables chi-square was applied and the value was observed with 5% significance level. The chi value of associated medical condition was  $\chi=4.105$  with 1 degree of freedom found association Therefore, there is a significant association between the fatigue and the any other medical condition in the demographic variables. Hence the hypothesis  $H_2$  was accepted.

### CONCLUSION

The study was conducted to assess the effectiveness of warm water foot bath on level of fatigue among the study subjects undergoing hemodialysis. The study findings shows that there was significant reduction on the level of fatigue

among the study subjects undergoing hemodialysis in Deepak Hospital at Jalna. Therefore, then warm water bath was an effective intervention in the reduction of level of fatigue among the hemodialysis patient.

## References

- Angwald E. et al. Clinical Nephrology. (3<sup>rd</sup> ed) Singapore: World fatigue among the study subjects undergoing hemodialysis. Page No.60-100 (2012)
- Ann Mariner Tomey, Martha Raile Alligood, "Nursing Theorists and Their Work"., 6<sup>th</sup> ed., Missouri: Mosby Publication. Page No:528 (2006)
- Bare G. Brenda, Smeltzer, C. Suzanna, Brunner and Suddarth's Text Book of Medical Surgical Nursing, 10<sup>th</sup> Ed., Philadelphia: Lippincott Publication. Page No:312 (2006)
- Basavanthappa, B.T, Nursing Research, 1<sup>st</sup> Ed., New Delhi: Jaypee brothers' medical publishers (pvt) Ltd. Page No:333 (2003).
- Black. M. Joyce and Jane Hokanson Hawks, Text Book of Medical Surgical Nursing, W.B Saunders Company publication Page No.412 (2001).
- Chithra. Complementary Medicine and Alternative Therapies, Indian Journal of Holistic Nursing 2(4) 4.5. Page No 678-689 (2014).
- Dorothy. et.al. Fundamentals Of Nursing Research, 2<sup>nd</sup> ed., USA: Jones and Bartlett publication. Page. No:200 (1995)
- Downs, F. S., & Newman, M. *A source book of nursing research* (3rd ed.). F.A. Davis Company. Page No:234 (1984)
- Gupta, G.S Kapor, Fundamentals of Mathematical Statistics, New Delhi: Sultan Chand publications. Page. No: 101 (1990).
- Jhamb M, Fatigue In study subjects Receiving Maintenance Dialysis American Journal of Kidney Disease. (2008).
- Jose Amala Anilda.S., Effectiveness of Warm Water foot bath on level of fatigue among the elderly patient, International Journal of Science and Research., Vol., ` 4., Issue 8. Page No. 574-578. (2017).
- Koike Japanese journal of pediatric nursing, 8: Page No 543-548 (2010)
- Kothari, C.R, Research Methodology Methods & Technique, 2<sup>nd</sup> ed., New Delhi: New age international (p) Ltd publishers. Page No:478, (2004).
- Lewis Sharon, M. Dark son Shannon Idolia, C. and Heitkemper, M.M., Medical and Surgical Nursing, 6<sup>th</sup> ed., Missouri: Mosby publication. (2007).
- Liao W. C et al. The Prevalence of Symptoms in Chronic Renal Failure (2011).
- Murugesan Ram Prabhar. Epidemic of chronic kidney disease in India. Journal of Indian Medicine. Vol 19, Issue 5. Page no. 15. (2008).
- Paul L. Kimmel. Psychosocial factors in adult chronic renal failure study subjects. American Journal of Kidney Diseases. Volume 35, Supplement, April 2000. Page no. S132-S140, (2004).
- Paul L. Kimmel. Psychosocial Factors in Adult End Stage Renal Disease Study subjects. American Journal of Kidney Disease., Volume 35. Supplement, April 2000. Page No. S132-S140, (2014)
- Priya. B., Effectiveness of foot bath on fatigue among the study subjects with chronic renal failure undergoing hemodialysis. International Journal of Medicine., Vol. 6., Page No.31-36, (2019).
- R. Selvakumari., Warm Water Foot Bath Therapy for Study subjects with Fever, Nightingale Nursing Times., Vol. 6, (Sup. 12) 24-25, (2015).
- Soumya Susan, Temperature of Dialysis Bath and Hemodialysis Tolerance, Nightingale Nursing Times. Vol. 26., Page No 461-468 (2013).
- Teruel. J.L., Temperature of Dialysis Bath and Hemodialysis Tolerance, Nightingale Nursing Times., Vol., 26., Page No. 461-468. (2018)
- www.emedicine. medscape.com/article/.
- Warm water foot bath is effective in reducing fatigue www.semanticscholar.org
- www.bibguru.com/c/Vancouver-citation-generator.
- www.iosrjournals.org.com.
- www.medical newstoday.com/articles/79364.php.
- www.pubmed.pmid:
- www.researchgate.net/publication/.
- www.sematischolar.org.com.
- www.wikipedia.com.
- www.worldwidejournals.com. at.
- http://www.netwellness.org/healthytopics/kidney/kidney disease, efm.