ISSN(O):2582-693X

Original Article

Assessment of Nurse's Knowledge Regarding Water Immersion Technique for Reducing Fatigue Among Patients at Ursula Horsman Memorial Hospital, Kanpur

Amita Verma[1], **K. Jyothisree**[2]

[1]M.Sc. Nursing 2nd Year, Rama College of Nursing, Rama University, Kanpur, UP.

[2]K. Jyothisree, Associate Professor Cum HOD, Medical Surgical Nursing, Rama University, Rama University, Kanpur, UP.

Corresponding Author:
Mrs. K. Jyothisree2, Associate Professor Cum HOD, Medical Surgical Nursing, Rama University, Rama University, Kanpur, UP.

E-mail:
: k.jyothisree.rcn@ramauniversity.ac.in

GFNPSS-International Journal of Multidisciplinary Research is a journal of open access. In this journal, we allow all types of articles to be distributed freely and accessible under the terms of the creative common attribution- non-commercial-share. This allows the authors, readers and scholars and general public to read, use and to develop non-commercially work, as long as appropriate credit is given and the newly developed work are licensed with similar terms.

How to cite this article: Verma Amita, Jyothisree K. Assessment of Nurse's Knowledge Regarding Water Immersion Technique for Reducing Fatigue Among Patients at Ursula Horsman Memorial Hospital, Kanpur. GFNPSS-Int. J. Multidiscip. Res. 2026; 7:4: 3411-3418

Submitted: 16April 2026: **Accepted:** 27 April 2026: **Published:** 30 April 2026

Abstract

Background: Chronic Kidney Disease (CKD) is a major global health problem and a leading cause of morbidity and mortality. Hemodialysis is one of the most commonly used life-saving treatments for patients with End-Stage Renal Disease (ESRD). However, patients undergoing hemodialysis frequently experience fatigue, which significantly affects their physical functioning, psychological well-being, and overall quality of life. Non-pharmacological interventions such as the water immersion technique have gained attention for their effectiveness in reducing fatigue. Nurses play a vital role in implementing such interventions; therefore, adequate knowledge among nurses is essential for improving patient outcomes.

Keywords: Hemodialysis, Water Immersion Technique, Fatigue, Chronic Kidney Disease

Introduction

Chronic Kidney Disease (CKD) is a growing global health problem and a major cause of morbidity and mortality worldwide. The increasing prevalence of CKD is mainly attributed to conditions such as diabetes mellitus, hypertension, and unhealthy lifestyle practices. When kidney function deteriorates to an advanced stage, patients require renal replacement therapies such as hemodialysis to sustain life.

Hemodialysis is one of the most commonly used and effective treatment modalities for patients with End-Stage Renal Disease (ESRD). It involves the removal of waste products, toxins, and excess fluid from the blood using an artificial kidney (dialyzer). Patients undergoing hemodialysis usually require regular sessions, typically two to three times per week, which can be physically and emotionally exhausting.

Among the various complications experienced by patients on hemodialysis, fatigue is one of the most common and debilitating symptoms. It affects the patient's ability to perform daily activities, reduces physical endurance, and negatively impacts psychological well-being and overall quality of life. Despite its high prevalence, fatigue is often under-recognized and inadequately managed in clinical practice.

In recent years, there has been increasing emphasis on non-pharmacological interventions for managing fatigue. These methods are generally safe, cost-effective, and easy to implement in clinical settings. One such intervention is the water immersion technique, which involves immersing the body or a part

of the body in warm water. This technique is believed to improve blood circulation, promote muscle relaxation, reduce stress, and thereby help in alleviating fatigue among patients.

Nurses play a vital role in the care and management of patients undergoing hemodialysis. They are responsible for monitoring patients, preventing complications, and providing both physical and psychological support. Therefore, it is essential for nurses to have adequate knowledge regarding effective interventions such as the water immersion technique to reduce fatigue.

In busy hospital settings like Ursula Horsman Memorial Hospital, Kanpur, where a large number of patients undergo regular hemodialysis, the implementation of simple and effective techniques to reduce fatigue becomes highly important. Assessing the knowledge of nurses regarding such interventions is necessary to ensure quality patient care.

Hence, the present study aims to assess the knowledge of staff nurses regarding the water immersion technique for reducing fatigue among hemodialysis patients and to identify its association with selected socio-demographic variables.

Chronic Kidney Disease (CKD) and End-Stage Renal Disease (ESRD) are major global health problems, and hemodialysis is one of the most commonly used life-saving treatments for such patients. Patients undergoing hemodialysis frequently experience various complications, among which fatigue is one of the most common and distressing symptoms. Fatigue can significantly affect the patient's physical activity, psychological well-being, and overall quality of life.

In clinical settings, fatigue is often under-recognized and inadequately managed. While pharmacological management is commonly used, there is increasing importance of non-pharmacological interventions that are simple, cost-effective, and safe. One such intervention is the water immersion technique, which has shown potential benefits in reducing fatigue and improving patient comfort.

Nurses play a key role in the care of patients undergoing hemodialysis. They are responsible not only for monitoring and managing complications but also for providing supportive and holistic care. Therefore, it is essential for nurses to have adequate knowledge regarding water immersion technique for reducing fatigue so that it can be effectively implemented in clinical practice.

In busy healthcare settings like Ursula Horsman Memorial Hospital, Kanpur, where a large number of patients undergo regular hemodialysis, the need for effective fatigue management becomes even more important. However, there may be a lack of awareness and knowledge among staff nurses regarding such innovative techniques.

Assessing the knowledge of nurses will help in identifying existing gaps and areas that require improvement. This will further assist in planning educational programs, in-service training, and workshops to enhance the knowledge and skills of nurses.

Hence, the present study is undertaken to assess the knowledge of staff nurses regarding water immersion technique for reducing fatigue among hemodialysis patients and to find its association with selected socio-demographic variables. The findings of the study will contribute to improving nursing practice and enhancing the quality of patient care.

Objective:

1. To assess the knowledge of staff nurses regarding water immersion technique for reducing fatigue among patients undergoing hemodialysis at Ursula Horsman Memorial Hospital, Kanpur.
2. To find out association between the level of knowledge of staff nurses and their selected socio demographic variables.

Hypothesis

Null Hypothesis (H_0):

There is no significant association between the level of knowledge of staff nurses regarding water immersion technique for reducing fatigue among dialysis patients and their selected socio-demographic variables**.**

Research Hypothesis (H_1):

There is a significant association between the level of knowledge of staff nurses regarding water immersion technique for reducing fatigue among dialysis patients and their selected socio-demographic variables.

Methodology

The present study adopted a quantitative descriptive research design to assess the knowledge of staff nurses regarding water immersion technique for reducing fatigue among patients undergoing hemodialysis. The study was conducted at Ursula Horsman Memorial Hospital, Kanpur, Uttar Pradesh.

https://doi.org/10.46376/ijmr/07.04.2026:3411-3418

The target population included staff nurses working in the dialysis unit and intensive care unit. A non-probability convenience sampling technique was used to select the samples. The total sample size consisted of 100 staff nurses who met the inclusion and exclusion criteria.

Data were collected using a structured questionnaire developed by the researcher based on an extensive review of literature and expert consultation. The tool was divided into two sections: Section A included demographic variables such as age, gender, educational qualification, and years of experience, while Section B consisted of knowledge-related questions regarding water immersion technique and its role in reducing fatigue among hemodialysis patients.

The collected data were analyzed using descriptive and inferential statistics, including frequency, percentage, mean, standard deviation, and chi-square test to determine the association between knowledge level and selected demographic variables.

Research Approach: The present study adopted a quantitative research approach to assess the knowledge of staff nurses regarding water immersion technique for reducing fatigue among patients undergoing hemodialysis.

The quantitative approach helps in providing accurate, reliable, and measurable results, which can be used to draw valid conclusions and improve nursing practice.

Research Design: The research design used in the present study was a descriptive research design. This design was considered appropriate as it helps to assess and describe the knowledge of staff nurses regarding water immersion technique for reducing fatigue among patients undergoing hemodialysis without manipulating any variables.

Variables

Research Variable

The research variable of the present study was:

Knowledge of staff nurses regarding water immersion technique for reducing fatigue among hemodialysis patients.

Demographic Variables

The selected demographic variables included:

- Age
- Gender
- Educational qualification
- Years of experience
- Working area (Dialysis Unit / Intensive Care Unit)
- Previous knowledge regarding hemodialysis

Population: The population of the present study consisted of staff nurses working in selected hospitals of Kanpur, Uttar Pradesh.

Target Population: The target population included staff nurses working in the dialysis unit and intensive care unit at Ursula Horsman Memorial Hospital, Kanpur, Uttar Pradesh.

Accessible Population: The accessible population consisted of staff nurses who were available during the period of data collection and working in the dialysis unit and intensive care unit of the selected hospital**.**

Sample: The sample of the present study comprised staff nurses working in the dialysis unit and intensive care unit who fulfilled the inclusion and exclusion criteria and were willing to participate in the study.

Sample Size: The sample size for the present study consisted of 100 staff nurses working in selected units of Ursula Horsman Memorial Hospital, Kanpur, Uttar Pradesh.

Sampling Technique: A non-probability convenience sampling technique was used to select the samples for the present study, as it allowed easy accessibility and availability of participants.

Sampling Criteria: The sampling criteria for the present study were divided into inclusion and exclusion criteria.

Inclusion Criteria

- The study included staff nurses who:
- Were working in the dialysis unit and intensive care unit
- Were willing to participate in the study
- Were available at the time of data collection
- Had experience in caring for patients undergoing hemodialysis
- Could understand and respond to the questionnaire

Exclusion Criteria

- The study excluded staff nurses who:
- Were not willing to participate in the study
- Were absent during the period of data collection
- Were not directly involved in the care of

https://doi.org/10.46376/ijmr/07.04.2026:3411-3418

hemodialysis patients

- Were unable to complete the questionnaire

Development of Research Tool

The research tool for the present study was developed by the researcher after an extensive review of literature, including textbooks, journals, research articles, and online sources related to water immersion technique and fatigue among hemodialysis patients.

Guidance and expert opinion were obtained from nursing experts and the research supervisor to ensure the relevance and accuracy of the tool. Based on their suggestions, necessary modifications were made.

The tool was prepared in a simple, clear, and structured format to facilitate easy understanding and accurate responses from the participants.

The content validity of the tool was established by submitting it to experts in the field of medical-surgical nursing and research. Their suggestions were incorporated to improve the quality of the tool.

The final tool was designed to assess the knowledge of staff nurses regarding water immersion technique for reducing fatigue among hemodialysis patients**.**

Description of The Tool

The research tool consisted of a structured questionnaire, divided into two sections:

Section A: Demographic Variables

This section included questions related to the personal and professional characteristics of the participants such as:

- Age
- Gender
- Educational qualification
- Years of experience
- Working area (Dialysis Unit / ICU)
- Previous knowledge regarding water immersion technique

Section B: Knowledge Questionnaire

This section consisted of multiple-choice questions (MCQs) to assess the knowledge of staff nurses regarding water immersion technique for reducing fatigue among hemodialysis patients.

- The questions covered the following areas:
- Meaning and concept of fatigue in hemodialysis patients
- Causes and effects of fatigue
- Definition of water immersion technique
- Procedure of water immersion technique
- Benefits of water immersion in reducing fatigue
- Role of nurses in applying the technique
- Precautions and contraindications

Results

The data collected from 100 staff nurses were analyzed using descriptive and inferential statistics.

Section A:

Demographic Findings

- Majority of staff nurses were in the 30–34 years age group
- Most of the participants were female
- Majority had completed B.Sc Nursing
- Most nurses had more than 5 years of experience
- Majority were working in Dialysis Unit and ICU
- Some participants had previous knowledge regarding water immersion technique

Section B:

Knowledge Findings

Out of 100 staff nurses:

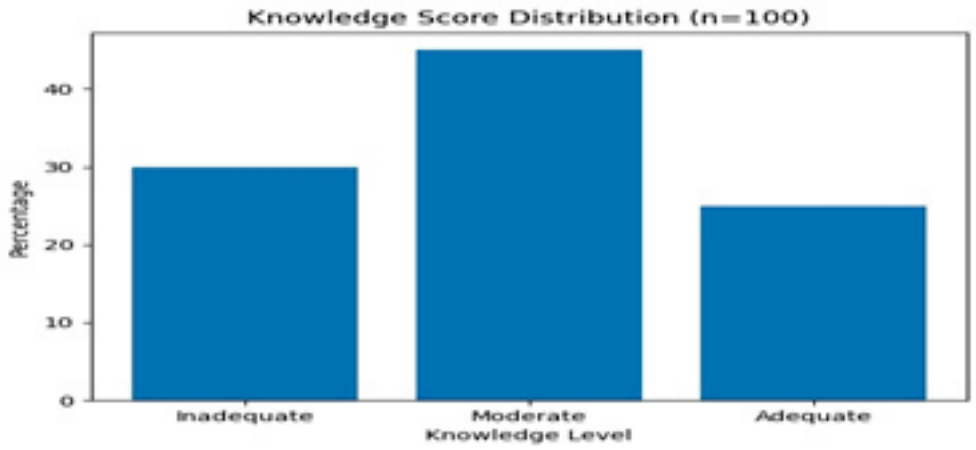
26.67%had adequate knowledge regarding water immersion technique.

46.67% had moderately adequate knowledge

26.67% had inadequate knowledge

Knowledge level	Score level	Frequency [n]	Percentage %
Inadequate	0-15	8	26.67%
Moderately Adequate	16-22	14	46.67%
Adequate	23 - 30	8	26.67%

https://doi.org/10.46376/ijmr/07.04.2026:3411-3418



"The above table shows that majority of participants 14 (46.67%) had moderate knowledge, whereas 8 (26.67%) had inadequate knowledge and 8 (26.67%) had adequate knowledge."

Section C

Association between demographic variables with their knowledge.

Demographic variables	Inadequate	Moderate	Adequate	Chi- square	Inferences
Age in years					
31-40 year	8	12	5		
41-50 years	7	13	5	6.21	Significant
51-60 years	8	12	5		
61-70 years	7	13	5		
Gender					
Male	15	25	10	1.45	Not Significant
Female	15	25	10		
Religion					
Hindu	18	30	12		
Christian	5	8	3	2.10	Not Significant
Muslim	5	8	3		
Any other	2	4	2		
Education level					
Illitrate	6	10	4		
Primary education	6	10	4	1.32	Not Significant
Secondary education	6	10	4		
Higher secondary	6	10	4		
Graduate and above	6	10	4		
Employment status					
Government employee	8	12	5		
Private employee	8	13	4	0.98	Not Significant
Laborer	7	12	6		
Bussiness	7	13	5		

https://doi.org/10.46376/ijmr/07.04.2026:3411-3418

Monthly Family Income					
Rs.below 15,000	8	12	5		
Rs.15001-20,000	7	13	5	1.76	Not Significant
Rs.20,000-25,000	8	12	5		
Rs.25,001and above	7	13	5		
Marital status					
Unmarried	10	15	5	2.05	Not Significant
Married	15	25	10		
Widow/ widower	5	10	5		
Dietary habits				0.89	Not Significant
Vegetarian	15	25	10		
Non Vegetarian	15	25	10		
Duration of hemodialysis					
Less then 1 year	10	10	5		
1-2 year	8	12	5	5.87	Significant
2-3 year	7	13	5		
More than 3 year	5	15	5		

The association analysis revealed that age and duration of hemodialysis had a statistically significant association with knowledge level ($p < 0.05$), whereas variables such as gender, religion, education level, employment status, monthly family income, marital status, and dietary habits showed no significant association ($p > 0.05$).

Conclusion

The present study was conducted to assess the knowledge of staff nurses regarding water immersion technique for reducing fatigue among patients undergoing hemodialysis at a selected hospital in Kanpur, Uttar Pradesh.

The findings of the study revealed that the majority of staff nurses had adequate knowledge regarding the concept, procedure, benefits, and precautions of the water immersion technique. This indicates that most nurses are aware of the importance of non-pharmacological interventions in reducing fatigue among hemodialysis patients.

However, a considerable proportion of staff nurses demonstrated moderately adequate and inadequate knowledge, which highlights the need for further improvement. This suggests that not all nurses are fully equipped with the necessary knowledge to effectively implement the technique in clinical practice.

The study also emphasized the importance of continuous education, in-service training programs, and workshops to enhance the knowledge and skills of nurses regarding innovative and supportive care techniques like water immersion.

Therefore, it can be concluded that although the overall knowledge level of staff nurses is satisfactory, there is still a need for regular educational interventions and skill development programs to ensure better patient care and improved quality of life among hemodialysis patients.

Implications

The findings of the present study have important implications in the field of nursing practice, education, administration, and research.

Nursing Practice

The study highlights the importance of improving the knowledge of staff nurses regarding water immersion technique for reducing fatigue among hemodialysis patients.

Nurses should incorporate non-pharmacological interventions like water immersion technique into routine patient care to enhance comfort and reduce fatigue.

It also emphasizes the need for evidence-based practice, where nurses apply updated knowledge

https://doi.org/10.46376/ijmr/07.04.2026:3411-3418

and skills to provide effective and quality care to patients undergoing hemodialysis.

Nursing Education

The findings indicate the need to include detailed content on fatigue management and water immersion techniques in the nursing curriculum.

Nursing students should be educated about innovative and supportive care techniques for hemodialysis patients.

Regular in-service education programs, workshops, and training sessions should be conducted to improve the knowledge and competency of nursing professionals.

Nursing Service / Continuing Education

The study suggests that hospitals should organize continuing nursing education (CNE) programs focusing on water immersion technique and fatigue management.

Such programs will help in updating the knowledge and improving the practical skills of nurses, ensuring better patient care outcomes.

Nursing Administration

Nurse administrators should take responsibility for ensuring that staff nurses are adequately trained in water immersion technique.

They should organize regular training programs, workshops, and seminars to enhance knowledge and skills.

Proper supervision, guidance, and implementation of standard protocols related to fatigue management should be ensured in dialysis units.

Administrators should also ensure the availability of necessary resources and supportive environment for effective patient care.

Nursing Research

The study provides a base for further research in the area of non-pharmacological interventions for fatigue management in hemodialysis patients.

Future studies can be conducted with a larger sample size, in different settings, or by using experimental designs to evaluate the effectiveness of water immersion technique.

Research can also explore other complementary therapies to improve the quality of life of hemodialysis patients.

Nursing Administration

The findings of the present study have significant implications for nursing administration. It highlights the responsibility of nurse administrators to ensure that staff nurses possess adequate knowledge regarding water immersion technique for reducing fatigue among hemodialysis patients.

Nurse administrators should organize regular in-service education programs, workshops, and training sessions to update the knowledge and skills of staff nurses. Emphasis should be given to teaching non-pharmacological interventions like water immersion technique as part of routine patient care.

They should also encourage participation in continuing nursing education (CNE) programs to maintain competency and improve the quality of care provided to patients undergoing hemodialysis.

Proper supervision and monitoring should be ensured in dialysis and intensive care units to promote safe and effective implementation of the technique. Nurse administrators should develop and implement standard protocols and guidelines related to fatigue management.

Additionally, adequate staffing, proper duty allocation, and availability of necessary resources should be ensured to support effective patient care. Motivation, guidance, and support from nursing administration can enhance the confidence and performance of staff nurses.

Financial support and sponsorship: Nil

Conflicts of interests: There is no conflict of interest

References

Text Books

1. Lewis SL, Bucher L, Heitkemper MM, Harding MM. Medical-Surgical Nursing: Assessment and Management of Clinical Problems. 11th ed. St. Louis: Elsevier; 2020.
2. Smeltzer SC, Bare BG, Hinkle JL, Cheever KH.

Brunner & Suddarth's Textbook of Medical-Surgical Nursing. 14th ed. Philadelphia: Lippincott Williams & Wilkins; 2018.

3. Ignatavicius DD, Workman ML, Rebar CR. Medical-Surgical Nursing: Concepts for Interprofessional Collaborative Care. 9th ed. St. Louis: Elsevier; 2018.
4. Daugirdas JT, Blake PG, Ing TS. Handbook of Dialysis. 5th ed. Philadelphia: Wolters Kluwer; 2015.
5. Polit DF, Beck CT. Nursing Research: Generating and Assessing Evidence for Nursing Practice. 10th ed. Philadelphia: Wolters Kluwer; 2017.
6. World Health Organization. Chronic kidney disease. Geneva: WHO; 2021.
7. National Kidney Foundation. KDOQI Clinical Practice Guidelines for Hemodialysis Adequacy. New York: NKF; 2015.

Journal References

8. Bossola M, Di Stasio E, Giungi S, Rosa F, Tazza L. Fatigue is associated with high prevalence and severity in patients on chronic hemodialysis. International Urology and Nephrology. 2015;47(6):1095–1102.
9. Jhamb M, Weisbord SD, Steel JL, Unruh M. Fatigue in patients receiving maintenance dialysis: a review of definitions, measures, and contributing factors. American Journal of Kidney Diseases. 2008;52(2):353–365.
10. McCann K, Boore JR. Fatigue in persons with renal failure who require maintenance haemodialysis. Journal of Advanced Nursing. 2000;32(5):1132–1142.
11. Johansen KL, Painter P. Exercise in individuals with CKD. American Journal of Kidney Diseases. 2012;59(1):126–134.
12. Song WJ, Sohng KY. Effects of a walking exercise program on fatigue, depression, and quality of life in patients on hemodialysis. Journal of Korean Academy of Nursing. 2012;42(4):551–560.

https://doi.org/10.46376/ijmr/07.04.2026:3411-3418